Fig. 1
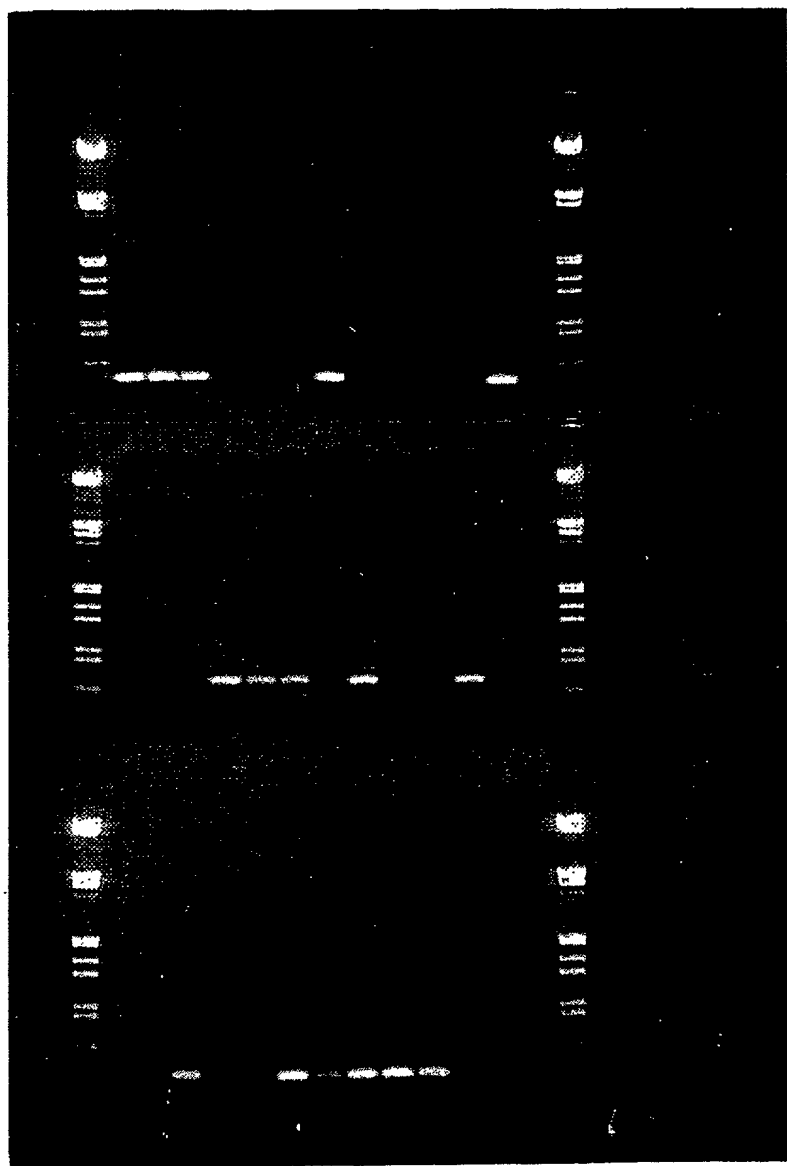
Fig. 2

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ACATTATCGT TGTGACGATT ACAGGTGGGC TATCGGGTAG TTTTAATGCG GCACGTGTAG
CTAGGGATAT GTATATCGAA GAGCATCCGA ATGTCAATAT CCATTTGATA
GATAGTTTGT CAGCCAGTGG GGAAATGGAT TTACTTGTAC ACCAAATCAA TCGCTTAATT
AGTGCAGGAT TAGATTTTCC ACAAGTAGTA GAAGCGATAA CTCACTATCG
GGAACACAGT AAGCTCCTCT TTGTTTTAGC GAAAGTTGAT AATCTTGTTA AGAATGGAAG
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GTAAAAGCAA GTTTTCCAAC GGCTGTTATT GACGAAGTTG CAACATCAGG
TCTATGCAGT TTTTATGCTG AAGAAGGTGG ACTTTTGATG GGCTACGAAG TGAAAGCGTG
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CCTCTTCTTC TAAGTTCGAG GGGGATTGTT TGTATGAGAC TATTGGATTT CATTCATTCA
AATATCTTAC GAATTGCTCC AGTTTATCTG CAAAATCTTG TTCAAAGAAG
ATCTGTAAGA AATCAGCTTT CTGTCCGCTG AAATAATAAC ATTTTCCAAA CATGTGTTGG
ATGCTAGGAG AAAGAATCCC CTTGCTTAGC TGAAAGGTCA CGCTCCCCTT
TGGAATTCGA TACGGGATGT TTAAAGCGTA TTTCTCTAGA CAGTCTTTTA TTTTATTCCA
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CGTTATCAAT GTAGAGCGAG AGAGCTTTTT GCATGATAAG ATTGGTATCG TAGTCGATTA
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GCACCGATTC GGAGGGCAGG AAAGAGTGTC GGTGTAAAAG ATTTTATATA GATGACGCGA
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GCCAAGGTTT CCATTGTGT GAGAATATAT AGAGCTTGTT GACTACCAGC
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CGCATATTTA CAGCGCTCTT ACTTGTTTTT TCACTGGTCA TCACGTCTGT
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Fig. 3   DNA Serotype 2

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CCGCTTTATT GGATGACATA TCCAAAATGG AATCTACTCA ACTAGCAACT
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```

Fig. 3 cont.

```
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ACCGCTCTAT TATTCTGTTG AAGAAGCTAT AGGGTTTTCA ACAAGGGAAG
TGGTCGACTA CGTCTTTATA AATTTACCAA GTGAATATTT TGACTAAAG CAATTAGTTT
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```

Fig. 3 cont.

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AGCGAAAACA AAAAGAAAAG AAATTTCTAA AACCTATTAT ATTTGTATTA
GATGGGTTAA AAGGAGATGA GTATATTCAT CCCAATCCAT CAAATCATTT GACGATCTTA
ACTGAAATGT ATAACGTCAG AGGCTTACTT ACCGATAATC ACCAAATTAA
ATTTCTCAAA GTTAATTATA GATTAATTAT AACTCCAGAT TTTGCTAAGT TTTTACCGCA
TGAATTTATT GTTGTACCAG ATACCTTGGA TATAGAGCAA GTTAAAAGCC
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Fig. 3. cont.

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CACTTATCGC TTGCTCTATG AGTTAGAAAA AGTTGCAATA GTTAAGGAGT
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GCTTCCATTG CCTACTGGAA TTTCAAAATG AACGAATGGA CTTCTATGAA
AGTAGAGGAG ATAAAGAGCT CTTACTAGAG TGTTATCGTT CATTTTTAGC CTTTGCTGTT
TTGTTTTTAG GCAAATATAA TCATTGGTTG AGCAAACAGC AAAAGAAGCT
TCTCCAAACG CTATTTAGAA TTGTATATAA ACAATTGAAG CAAAATAAGC GACTTGCTTT
ACTAATGAAT GCTTATTATT TGGTAGGGTG TCTTCATCTT AATTTTAGTG
TCTTTCTGAA AACGGGGAAA GATAAAATTC AAGAAAGATT GAGAAGAAGT GAAAGTAGTA
CTCGGTAAGA ATGTTGTAAT AAATGGTTGA AAGAAAGGG GATTAAAATG
AATCCAACAA ATAGTAGAAT AGCACTCTTT GATACGATTA AATGTATCAT GGTACTTTGT
GTTATTTTTA CACATCTGGA TTGGTCTGTT GAGCAGCGTC AATGGTTTAT
CTTTCCGTAT TTCGTTGACA TGGCTGTTCC AATTTTTCTG TTGCTTTCTG CCTATTTTCG
AACGAATAAG TGGAATACAA AACAAGAGAC GCTAAAGCTC AAGTTCAGCA
GTGGTATAAA AGAAAGTATA AACATGCTTT GTCTCTATGC TATCGTGATG GCTGTTAATG
TTTTATTGAG CTATTCGAGA ACCATCTGAT AGGAGTAAAG CCTTTTTCAG
GTTCTTCATC GCTCCGTTCA TTTGTCCTGT GGCTACTTTC TGGAGAATCG GGTCCAGGGA
GTTGGGAGTT ACTATGTTCC GTTGTTGATT CAGGTAGTTT TTTTATTACC
AATTTTGTAT GTTCTTTTCG AGAAAAATAA ATGGTTGGGC TTGCTTACTT GTTTTTTAGT
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AGCAGGATGT GCGTTCCAAG GTAGATACTT TCATTGCGAC CCTATTTGGG
ATTATTGGAG CAATTCTGAT TTTTGTGAAT CATTCTATAG AGCCCTTCTC CTGGTTTTAT
GGTTGGAAGT CTACTTCCTT TCTATGCGTC CCATTTGCGT ATGCTATGCT
ATTTTTTATG ATAAAGTATG GACAGAAGAT TCCAGCAATA CTGTTGTCAA AATTGGGAGT
TGCTTCTTAT CATATCTACT TGACCCAGAT GCTGTATTTT TCAGTAGTCG
```

Fig. 3 cont.

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CACCATTTTT AGCAGTGCAA TTTAAGGTAT CTTCGTTGAA TTTGTGGAAC GGCTTGTTTA
CCTTTCTAAT TTGCCTGTTT GGTGGCTATA TTTTCTACAA AGTGGATCTG
TTTATGAGAG TACGTGGAAA ACGATAATGA CTCATTTCAG ATTAGCAGAT GCCATTTCGT
TTATTAGCAG ATTCGCATGT TAATATTCCG ACAAAGAAAT TCAAATAGGT
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ATATTTATTA ACTGAACAAG GAGAATTTTT AAGAGAACTG TTTGTTTAAT
CCCAGCACGA TCTGGTTCGA AAGGCTTACC GAATAAAAAC ATGCTATTTT TGGACGGGAA
ACCCATGATT TTTCACACGA TTGATGTGGC AATTGAATCA GGTTGTTTTG
AGAAAGAAGA CATCTATGTC AGTACGGATT CAGAAATGTA TAAGGGGGGC ACCTCTATAA
ATTCCCAAAA TTGCGAATTT GGAGTTACGA AAGCCTTGTT AAATCAACAT
CTTAAATTTT AGAAAATTAG TTTTTAGAGG TCCCCAAGGG GATTTGCGAG ACAAGAGGCA
TCAATGTATT GTTAAGACCC AAAGAACTAT CTACTTATCA TACTCCATCG
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TTCTGCAAGT CACCTCACCG TTACGGACTG GCGAACAGAT AAAAGAAGCC
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GGTTACTTAT CCTTAAAGTC TGTATGTAGA AGGAGAAAAA TTGAGACGAA TTTATATTTG
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GGTGATCATT TTTCAAGATC ACCGTCAAGT CGGTCATTTT TTAAATAAAC
ATCGGATTCC CTATTCTCTT TTGGAGGATG GTTATAATTT TTTCAAGGAT AAAAGAGTGT
GCGATTTGGA GTCAATTCAA TCATCTGTCT GGAAAAGACT CTTTTATCAA
TGGTATTTTA AACCAACATA TTTGATTGGT TCAAGTCTCT ATTGTCAATC CATTGAGGTC
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GATTGCTATT ATTGACCCAG CCCTTGTCTT GGGATTATCA TGTGACCGAA GAGAGTTGTT
GGAGATTTAT GTAGCAGGTC TTGCCCCTTA TCGGGAAGAC TATACAATCT
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TTCTGCCTCA AGGTATTCCG TTTGAGTTGT TCGAAATGGC AGGTAATATC
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GAGAAAGTGT ATTTAAAGGA CACTTTTCCT CTTCTTTCAA AAAATGATAT
TTTGCGTGAG GGGATAGAAT AGGAGGATTC ATGTCTAAAA AATCAATAGT TGTCTCAGGT
CTCGTCTATA CGATTGGAAC CATCCTCGTT CAGGGATTAG CCTTCATTAC
CCTCCCCATC TATACTCGTG TCATTTCTCA GGAAGTATAT GGGCAGTTTA GCTTGTATAA
TTCGTGGGTG GGGCTAGTTG GTCTCTTTAT CGGTCTACAG TTAGGTGGGG
CTTTTGGCCC GGGATGGGTA CACTTCCGCG AGAAATTTGA TGATTTCGTA TCCACCTTGA
TGGTCTCTTC TATCGCTTTC TTTTTACCAA TTTTTGGGCT ATCTTTTCTC
CTCAGTCAGC CCCTATCGCT CCTATTTGGT TTGCCTGATT GGGTCGTTCC GCTTTACTTT
TTGCAAAGTT TTATGAGTGT TGTGCAAGGA TTTTTTACGA CCTATTTAGT
GCAGCGGCAG CAGTCCATGT GGACTTTACT CCTATCGGTA CTGAGCGCTG TTATCAACAC
TGCTTTATCT TTATTTCTCA TCTTTTCGAT GGAGAATGAT TTCATCGCTC
GTGTAATGGC AAACTCGGCA ACGACTGGTG TTTTTGCTTG TGTGTCCTTG TTGTTTTTCT
ATAAGAAGAT TGGGCTTCAT TTTCGAAAGG ACTATCTTCG GTATGGTTTA
AGTATATCGA TTCCTCTTAT TTTTCATGGA TTAGGTCATA ATGTACTCAA TCAATTTGAC
AGAATCATGC TCGGCAAGAT GCTAACACTG TCAGATGTAG CCCTATACAG
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GTGTCCGTGG TATTTTGAGA AAAAGAGAGG TGCAGATAAA GATTTGCTCA
GTTATGTCCG TTACTATCTG GCGATTGGCC TGTTTGTGAC TTTTGGATTT CTAACAATTT
ACCCTGAATT AGCGATGTTG TTAGGTGGAT CTGAGTATCG TTTCAGTATG
GGATTTATTC CCATGATTAT TGTCGGGGTG TTCTTTGTAT TTCTTTATAG TTTTCCAGCC
AATATCCAGT TTTATAGTGG AAATACAAAG TTTTTGCCAA TTGGTACTTT
TATAGCAGGT GTACTAAATA TTTCCGTCCA CTTTGTTTTG ATACCGACAA AGAATTTATG
GTGCTGCTTT GCAACGACTG CTTCCTATCT GTTGTTGCTA GTCTTGCATT
ATTTTGTTGC TAAGAAAAAG TATGCTTACG ATGAAGTTGC GATTTCAACA TTTGTTAAGG
TAATTGCTCT TGTTGTCGTC TATACAGGCT TGATGACAGT ATTTGTCGGT
TCAATCTGGA TTCGTTGGTC ACTAGGAATA GCGGTTCTAG TCGTTTATGC CTACATTTTT
AGAAAGGAAT TAACAGTTGC CCTCAATACA TTCAGGGAAA AACGGTCTAA
```

Fig. 3 cont.

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ATAAGGGCAC CTCTATAAAC TCCCAAAATT GCGAATTTGG AGTTACGAAA GCCTTGTTAA
ATCAAACATT TTAAATTTTA GAAAATTAGT TTTTAGAGGT CCCCATATAA
AAACGTCCCA AATGAGAGGT GCTCATAAGA ATTGACCATC ACTGCCATCT ACCCAAAGTT
CAAGTATTCT CTACCATGAA AATTGTGCTA TAATCAAGTA TAAAGAAGGG
AATGTTTCTT AAAGGACGTA TGCGCCTCTG CTTATGCCAG AAGTCATGAG GTAAATCTCC
CTAAAAATTG GGTAGAAAAG CAGATTAAAC TTCCACCAAT CTATTGAAGA
TCGTGTTGAA GAGCAGGCTT TAGAAGCAAC AAGCCCTGAG ACTATTCGAA AGAAATCTAG
GGCTATTTTT TCTAATCGGC TATCAGAAGT GAAGTAGCGA TCTTTATTAG
TGTTCTTTTA CTACTTAAGG AAAACCAAGC TGCTCCCTCA AGACTTTATG GGAGCGATTT
ACAGTCATTT TTAGAAAGGA AATAAAATGG TTTATATTAT TGCAGAAATT
GGTTGTAATC ACAACGGTGA TGTTCATCTA GCACGGAAAA TGGTAGAAGT TGCCGTTGAT
TGTGGTGTGG ATGCCGTTAA ATTTCAGACA TTTAAGGCAG ATTTGTTGAT
TTCAAAATAC GCACCAAAGG CCGAATACCA AAAAATTACA ACAGGAGAGT CAGATTCTCA
GCTCGAAATG ACTCGTCGTT TGGAATTGAG CTTTGAAGAG TATCTTGATT
TGCGTGATTA CTGTCTTGAA AAGGGAGTTG ATGTGTTTTC GACACCTTTT GATGAGGAAT
CATTGGACTT CTTGATTAGC ACAGATATGC CCGTTTATAA GATTCCATCT
GGTGAGATTA CCAATCTTCC CTATTTGGAA AAAATTGGTC GTCAAGCTAA GAAAGTTATT
CTTTCAACTG GTATGGCTGT TATGGATGAA ATTCATCAAG CGGTGAAGAT
TTTGCAGGAA AATGGAACGA CCGATATTTC GATTTTGCAT TGTACAACCG AGTATCCAAC
CCCTTACCCT GCTTTGAATT TGAATGTCTT GCATACCTTG AAAAAAGAAT
TTCCAAACTT AACAATTGGC TATTCAGACC ATAGTGTTGG TTCAGAAGTA CCCATCGCTG
CTGCAGCAAT GGGAGCTGAA TTGATTGAAA AGCACTTTAC TCTGGACAAT
GAAATGGAAG GACCAGATCA TAAAGCGAGT GCTACTCCTG ATATCTTAGC AGCCTTGGTA
AAAGGAGTGA GGATAGTGGA ACAATCTCTT GGTAAATTTG AAAAAGAGCC
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AATTGCTAAA GGCGAAGTCT TTACAGAAGA AAACATCACT GTCAAAAGAC
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TTATGCGTCG CTTATTGAGC TATCTACAGG ATGATCCAGA AATGGAGCTG
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GAAGCGGACA AGCGTAGGAT TGTCAAGCGG ATTCCATTGC ATTTGACGGA
TACGTCTAAG CAGACAATCG TCAAATCTTT AGCGACCTTG ACAGAGCAAC TCACGGTTCT
TTTTGAAGAA GTCCAGTATG ACTTGGTGTT GATTCTGGGG GATCGCTATG
AGATGCTACC AGTTGCCAAT GCTGCGTTGC TTTATAATAT TCCTATTTGC CATATTCATG
GTGGTGAAAA AACCATGGGA AATTTTGATG AGTCGATTCG CCATGCCATT
ACCAAGATGA GTCACCTTCA TCTGACATCA ACGGATGAAT TTAGAAATCG TGTCATTCAA
CTAGGAGAAA ATCCAACCAT GTACTGAACA TCGGAGCTAT GGGTGTTGAA
AATGTTTTAA AACAAGACTT TTTGACAAGA GAAGAGTTGG CGATGGAACT TGGAATTGAT
TTTGCCGAGG ATTACTATGT TGTACTCTTT CACCCTGTTA CCTTGGAGGA
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GTGTTTGATA ATTGGATCCA ATTCGGATAC ACATGCCGAT AAGATAATGG
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CGCCAATTTG GACGTTTGTC AGGACCGAGT GTGGTACATG TTGGAACTTC
TAAGGAAGCG ATTGTTGGTG GTTTGGGGCA ATTACGTGAT GTGATAGATT TTACCAATCC
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TCCTTGGTTG GATAGAACTC GATATGAACT CATTGGATAT TTTGAAGATA AACCGATCAG
TGACTATCGT GGCTATCCTG TATTTGGTCC CTTGCAAGAT GTCCTAACCT
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AGGAAATCTT TGACTTGCTT GCCAAAGATC ATTATGATGC TTTGTTCAAC
ATCATTAGCG AGCAAGCCAA TATTTTTTCC CCAGATAGTA TCAAGGGACG AGGGGTTTTC
ATAGGTTTTT CAAGTTTTGT AGGAGCCGAT TCCTATGTCT ATGACAATTG
TATCATCAAT ACGGGTGCCA TTGTGGAACA TCATACCACG GTGGAGGCCC ATTGTAACAT
TACTCCAGGA GTGACCATAA ATGGCTTGTG CCGTATCGGA GAAAGCACTT
ATATTGGAAG TGGTTCAACA GTGATTCAAT GTATCGAGAT TGCACCTTAT ACAACATTGG
GGGCAGGGAC AGTTGTTTTG AAATCGTTGA CGGAGTCAGG GACCTATGTT
```

Fig. 3 cont.

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GGTGTACCTG  CTAGAAAGAT  TAAATAGGTG  AATTGATGGA  ACCAATTTGT  CTGATTCCTG
CTCGGTCAGG  ATCAAAAGGT  TTACCAAATA  AAAACATGTT  ATTTTTAGAT
GGTGTACCGA  TGATTTTCCA  TACCATTCGA  GCTGCGATTG  AGTCTGGATG  TTTTAAGAAA
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AGTTATATGG  GAAAGGTCAA  GCTGACCACG  TTGTTAGCTT  TACCAAAGTC
GATAAGTCTC  CAACATTGTT  TTCAACTTTA  GACGAAAACG  GATTCGCTAA  GGATATTGCA
GGATTAGGTG  GCAGTTATCG  TCGTCAAGAT  GAGAAAACAC  TCTACTATCC
TAATGGAGCG  ATTTATATTT  CTTCTAAGCA  GGCTTATTTA  GCGGATAAAA  CTTATTTTTC
TGAAAAAACA  GCGGCCTATG  TGATGACGAA  GGAAGATTCG  ATTGATGTAG
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TGGTGATAGA  AGCTATTTCA  GTGGCTAGAC  TATGTTGGTA  TGTGTTTTAG
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TTTAATTATA  TAAGGGGACC  TCTAAAAACT  CCCTAAATTT  CCCAAAAATG
AGATAATAGA  ATAAAAAGTA  ATGAGGAGAG  CTGTCATGCA  TTTATTCACA  GACGATGAAA
AAATCTTGTC  AAAACTATCA  GAGAAAGGCA  ATCCCTTAGA  ACGTTTGGAT
GCCGTTATGG  ATTGGAATAT  CTTTCTTCCA  TTGTTGTCAG  AGTTATTCAG  TCGTAAAGAT
AAAGTCATCA  GTCGTGGCGG  TCGTCCTCAC  CTAGACTATC  TCATGATGTT
CAAAGCGCTC  TTGCTTCAAC  GTCTTCATAA  CCTATCTGAC  GATGCCATGG  AATATCAACT
GCTGGATCGT  ATATCTTTTC  GTCGTTTTGT  TGGTTGTCAT  GAAGACACTG
TTCCCGATGC  GAAAACTATC  TGGCTCTATC  GTGAGAAATT  AACCAAGTCA  GGTCGTGAAA
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GCCCATTCAG  GTCAGATTGT  GGATGCTACC  TTTGTCGAAT  GCCCTAAACA  ACGCAATTCA
CGTGAGGACA  ATCAGAAAAT  CAAAACTTAT  CGAAAATTAT  GAGGTCACAA
CAGCTAGTGT  ACACGACTCC  AATGTCCTAG  CTCCTCTTTG  TGATGCCAAT  GAAGCGGTTT
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TGTGACCTTA  ACCAACCTGC  TCTACAATAT  CTGTCGTTTT  GAGCAAATCA
AACGACTGGG  ATTACCATCC  GTGGGCTTAG  TGCGCCCAAA  AAATAGGAAA  ATAAGCAAAA
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ATGGCATATT  CATTAGATTT  TCGTAAAAAA  GTTCTCGCAT  ACTGTGAGAA
AACCGGCAGT  ATTACTGAAG  CATCAGCTAT  TTTCCAAGTT  TCACGTAACA  CTATCTATCA
ATGGCTAAAA  TTAAAAGAGA  AAACCGGCGA  GCTTCATCAC  CAAGTTAAAG
GAACCAAGCC  AAGAAAAGTG  GATAGAGATA  AATTAAAGAA  TTATCTTGAA  ACTCATCCAG
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ATTCATTACC  CCCTCAAAGC  TATGGGATAT  ACTCGAAAAA  AAAGAGCTGT  ACCTACTATG
AACAAGACCC  TGAAAAAGTA  GAACTGTTCC  TTAAAGAATT  GAATAACTTA
AGCCACTTGA  CTCCTGTTTA  TATTGACGAG  ACAGGGTTTG  AGACATATTT  TCATCGAAAA
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GACATACAAA  GATACTATGA  CGAGTGGCTT  TTTCGAAGCT  T
```

Fig. 3 cont.   SEQ. ID. NO. 9

SLDIDHMMEVMEASKSAAGSACPSPQAYQAAFEGAENIIVVTITGGLSGSFNAARVARDM
YIEEHPNVNIHLIDSLSASGEMDLLVHQINRLISAGLDFPQVVEAITHYREHSKLLFVLA
KVDNLVKNGRLSKLVGTVVGLLNIRMVGEASAEGKLELLQKARGHKKSVTAAFEEMKKAG
YDGGRIVMAHRNNAKFFQQFSELVKASFPTAVIDEVATSGLCSFYAEEGGLLMGYEVKA

Fig. 3 cont. ORF2Z

SEQ. ID. NO. 10

MKKYQVIIQDILTGIEEHRFKRGEKLPSIRQLREQYHCSKDTVQKAMLELKYQNKIYAVE
KSGYYILEDRDFQDHTCRAQSYRLSRITYEDFRICLKESLIGRENYLFNYYHQQEGLAEL
ISSVQSLLMDYHVYTKKDQLVITAGSQQALYILTQMETLAGKTEILIENPTYSRMIELIR
HQGIPYQTIERNLDGIDLEELESIFQTGKIKFFYTIPRLHNPLGSTYDIATKTAIVKLAK
QYDVYIIEDDYLADFDSSHSLPLHYLDTDNRVIYIKSFTPTLFPALRIGAISLPNQLRDI
FIKHKSLIDYDTNLIMQKALSLYIDNGMFARNTQHLHHIYHAQWNKIKDCLEKYALNIPY
RIPKGSVTFQLSKGILSPSIQHMFGKCYYFSGQKADFLQIFFEQDFADKLEQFVRYLNE

Fig. 3 cont.   ORF2Y

SEQ. ID. NO. 53

MKIIIPNAKEVNTNLENASFYLLSDRSKPVLDAISQFDVKKMAAFYKLNEAKAELEADRW
YRIRTGQAKTYPAWQLYDGLMYRYMDRRGIDSKEENYLRDHVRVATALYGLIHPFEFISP
HRLDFQGSLKIGNQSLKQYWRPYYDQEVGDDELILSLASSEFEQVFSPQIQKRLVKILFM
EEKAGQLKVHSTISKKGRGRLLSWLAKNNIQELSDIQDFKVDGFEYCTSESTANQLTFXR
SIKM

Fig. 3 cont.   ORF2X

SEQ. ID. NO. 11

```
MKKRSGRSKSSKFKLVNFALLGLYSITLCLFLVTMYRYNILDFRYLNYIVTLLLVGVAVL
AGLLMWRKKARIFTALLLVFSLVITSVGIYGMQEVVKFSTRLNSNSTFSEYEMSILVPAN
SDITDVRQLTSILAPAEYDQDNITALLDDISKMESTQLATSPGTSYLTAYQSMLNGESQA
MVFNGVFTNILENEDPGFSSKVKKIYSFKVTQTVETATKQVSGDSFNIYISGIDAYGPIS
TVSRSDVNIIMTVNRATHKILLTTTPRDSYVAFADGGQNQYDKLTHAGIYGVNASVHTLE
NFYGIDISNYVRLNFISFLQLIDLVGGIDVYNDQEFTSLHGNYHFPVGQVHLNSDQALGF
VRERYSLTGGDNDRGKNQEKVIAALIKKMSTPENLKNYQAILSGLEGSIQTDLSLETIMS
LVNTQLESGTQFTVESQALTGTGRSDLSSYAMPGSQLYMMEINQDSLEQSKAAIQSVLVE
K
```

Fig. 3 cont.   **CPS2A**

SEQ. ID. NO. 12

MNNQEVNAIEIDVLFLLKTIWRKKFLILLTAVLTAGLAFVYSSFLVTPQYDSTTRIYVVS
QNVEAGAGLTNQELQAGTYLAKDYREIILSQDVLTQVATELNLKESLKEKISVSIPVDTR
IVSISVRDADPNEAARIANSLRTFAVQKVVEVTKVSDVTTLEEAVPAEEPTTPNTKRNIL
LGLLAGGILATGLVLVMEVLDDRVKRPQDIEEVMGLTLLGIVPDSKKLK

Fig. 3 cont.   CPS2B

SEQ. ID. NO. 13

MAMLEIARTKREGVNKTEEYFNAIRTNIQLSGADIKVVGITSVKSNEGKSTTAASLAIAY
ARSGYKTVLVDADIRNSVMPGFFKPITKITGLTDYLAGTTDLSQGLCDTDIPNLTVIESG
KVSPNPTALLQSKNFENLLATLRRYYDYVIVDCPPLGLVIDAAIIAQKCDAMVAVVEAGN
VKCSSLKKVKEQLEQTGTPFLGVILNKYDIATEKYSEYGNYGKKA

Fig. 3 cont.   CPS2C

SEQ. ID. NO. 14

MIDIHSHIIFGVDDGPKTIEESLSLISEAYRQGVRYIVATSHRRKGMFETPEKIIMINFL
QLKEAVAEVYPEIRLCYGAELYYSKDILSKLEKKKVPTLNGSCYILLEFSTDTPWKEIQE
AVNEMTLLGLTPVLAHIERYDALAFQSERVEKLIDKGCYTQVNSNHVLKPALIGERAKEF
KKRTRYFLEQDLVHCVASDMHNLYSRPPFMREAYQLVKKEYGEDRAKALFKKNPLLILKN
QVQ

<div align="center">

Fig. 3 cont.   **CPS2D**

SEQ. ID. NO. 15

</div>

MNIEIGYRQTKLALFDMIAVTISAILTSHIPNADLNRSGIFIIMMVHYFAFFISRMPVEF
EYRGNLIEFEKTFNYSIIFVIFLMAVSFMLENNFALSRRGAVYFTLINFVLVYLFNVIIK
QFKDSFLFSTTYQKKTILITTAELWENMQVLFESDILFQKNLVALVILGTEIDKINLPLP
LYYSVEEAIGFSTREVVDYVFINLPSEYFDLKQLVSDFELLGIDVGVDINSFGFTVLKNK
KIQMLGDHSIVTFSTNFYKPSHIWMKRLLDILGAVVGLIISGIVSILLIPIIRRDGGPAI
FAQKRVGQNGRIFTFYKFRSMFVDAEVRKKELMAQNQMQGGMFKMDNDPRITPIGHFIRK
TSLDELPQFYNVLIGDMSLVGTRPPTVDEFEKYTPSQKRRLSFKPGITGLWQVSGRSDIT
DFNEVVRLDLTYIDNWTIWSDIKILLKTVKVVLLREGGQ

                        Fig. 3 cont.   CPS2E

                        SEQ. ID. NO. 16

MRTVYIIGSKGIPAKYGGFETFVEKLTEYQKDKSINYFVACTRENSAKSDITGEVFEHNG
ATCFNIDVPNIGSAKAILYDIMALKKSIEIAKDRNDTSPIFYILACRIGPFIYLFKKQIE
SIGGQLFVNPDGHEWLREKWSYPVRQYWKFSESLMLKYADLLICDSKNIEKYIHEDYRKY
APETSYIAYGTDLDKSRLSPTDSVVREWYKEKEISENDYYLVVGRFVPENNYEVMIREFM
KSYSRKDFVLITNVEHNSFYEKLKKETGFDKDKRIKFVGTVYNQELLKYIRENAFAYFHG
HEVGGTNPSLLEALSSTKLNLLLDVGFNREVGEEGAKYWNKDNLHRVIDSCEQLSQEQIN
DMDSLSTKQVKERFSWDFIVDEYEKLFKG

Fig. 3 cont.   **CPS2F**

SEQ. ID. NO. 17

MKKILYLHAGAELYGADKVLLELIKGLDKNEFEAHVILPNDGVLVPALREVGAQVEVINY
PILRRKYFNPKGIFDYFISYHHYSKQIAQYAIENKVDIIHNNTTAVLEGIYLKRKLKLPL
LWHVHEIIVKPKFISDSINFLMGRFADKIVTVSQAVANHIKQSPHIKDDQISVIYNGVDN
KVFYQSDARSVRERFDIDEEALVIGMVGRVNAWKGQGDFLEAVAPILEQNPKAIAFIAGS
AFEGEEWRVVELEKKISQLKVSSQVXRMDYYANTTELYNMFDIFVLPSTNPDPLPTVVLK
AMACGKPVVGYRHGGVCEMVKEGVNGFLVTPNSPLNLSKVILQLSENINLRKKIGNNSIE
RQKEHFSLKSYVKNFSKVYTSLKVY

Fig. 3 cont.   CPS2G

SEQ. ID. NO. 18

MKIISFTMVNNESEIIESFIRYNYNFIDEMVIIDNGCTDNTMQIIFNLIKEGYKISVYDE
SLEAYNQYRLDNKYLTKIIAEKNPDLIIPLDADEFLTADSNPRKLLEQLDLEKIHYVNWQ
WFVMTKKDDINDSFIPRRMQYCFEKPVWHHSDGKPVTKCIISAKYYKKMNLKLSMGHHTV
FGNPNVRIEHHNDLKFAHYRAISQEQLIYKTICYTIRDIATMENNIETAQRTNQMALIES
GVDMWETAREASYSGYDCNVIHAPIDLSFCKENIVIKYNELSRETVAERVMKTGREMAVR
AYNVERKQKEKKFLKPIIFVLDGLKGDEYIHPNPSNHLTILTEMYNVRGLLTDNHQIKFL
KVNYRLIITPDFAKFLPHEFIVVPDTXDIEQVKSQYVGTGVDLSKIISLKEYRKEIGFIG
NLYALLGFVPNMLNRIYLYIQRNGIANTIIKIKSRL.

Fig. 3 cont.   CPS2H

SEQ. ID. NO. 19

MQADRRKTFGKMRIRINNLFFVAIAFMGIIISNSQVVLAIGKASVIQYLSYLVLILCIVN
DLLKNNKHIVVYKLGYLFLIIFLFTIGICQQILPITTKIYLSISMMIISVLATLPISLIK
DIDDFRRISNHLLFALFITSILGIKMGATMFTGAVEGIGFSQGFNGGLTHKNFFGITILM
GFVLTYLAYKYGSYKRTDRFILGLELFLILISNTRSVYLILLLFLFLVNLDKIKIEQRQW
STLKYISMLFCAIFLYYFFGFLITHSDSYAHRVNGLINFFEYYRNDWFHLMFGAADLAYG
DLTLDYAIRVRRVLGWNGTLEMPLLSIMLKNGFIGLVGYGIVLYKLYRNVRILKTDNIKT
IGKSVFIIVVLSATVENYIVNLSFVFMPICFCLLNSISTMESTINKQLQT

Fig. 3 cont.   CPS2I

SEQ. ID. NO. 20

MEKVSIIVPIFNTEKYLRECLDSIISQSYTNLEILLIDDGSSDSSTDICLEYAEQDGRIK
LFRLPNGGVSNARNYGIKNSTANYIMFVDSDDIVDGNIVESLYTCLKENDSDLSGGLLAT
FDGNYQESELQKCQIDLEEIKEVRDLGNENFPNHYMSGIFNSPCCKLYKNIYINQGFDTE
QWLGEDLLFNLNYLKNIKKVRYVNRNLYFARRSLQSTTNTFKYDVFIQLENLEEKTFDLF
VKIFGGQYEFSVFKETLQWHIIYYSLLMFKNGDESLPKKLHIFKYLYNRHSLDTLSIKRT
SSVFKRICKLIVANNLFKIFLNTLIREEKNND

Fig. 3 cont.   CPS2J

SEQ. ID. NO. 21

```
MINISIIVPI YNVEQYLSKC INSIVNQTYK HIEILLVNDG STDNSEEICL AYAKKDSRIR
YFKKENGGLS DARNYGISRA KGDYLAFIDS DDFIHSEFIQ RLHEAIEREN
ALVAVAGYDR VDASGHFLTA EPLPTNQAVL SGRNVCKKLL EADGHRFVVA WNKLYKKELF
EDFRFEKGKI HEDEYFTYRL LYELEKVAIV KECLYYYVDR ENSIITSSMT
DHRFHCLLEF QNERMDFYES RGDKELLLEC YRSFLAFAVL FLGKYNHWLS KQQKKLLQTL
FRIVYKQLKQ NKRLALLMNA YYLVGCLHLN FSVFLKTGKD KIQERLRRSE
SSTR
```

Fig. 3 cont.   CPS2K

SEQ. ID. NO. 22

```
MSKKSIVVSG LVYTIGTILV QGLAFITLPI YTRVISQEVY GQFSLYNSWV GLVGLFIGLQ
LGGAFGPGWV HFREKFDDFV STLMVSSIAF FLPIFGLSFL LSQPLSLLFG
LPDWVVPLIF LQSLMIVVQG FFTTYLVQRQ QSMWTLPLSV LSAVINTALS LFLTFPMEND
FIARVMANPA TTGVLACVSX WFSQKKNGLH FRKDYLRYGL SISIPLIFHG
LGHNVLNQFD RIMLGKMLTL SDVALYSFGY TLASILQIVF SSLNTVWCPW YFEKKRGADK
DLLSYVRYYL AIGLFVTFGF LTIYPELAML LGGSEYRFSM GFIPMIIVGV
FFVFLYSFPA NIQFYSGNTK FLPIGTFIAG VLNISVHFVL IPTKNLWCCF ATTASYLLLL
VLHYFVAKKK YAYDEVAIST FVKVIALVVV YTGLMTVFVG SIWIRWSLGI
AVLVVYAYIF RKELTVALNT FREKRSK
```

Fig. 3 cont.   CPS20

SEQ. ID. NO. 23

```
MVYIIAEIGC NHNGDVHLAR KMVEVAVDCG VDAVKFQTFK ADLLISKYAP KAEYQKITTG
ESDSQLEMTR RLELSFEEYL DLRDYCLEKG VDVFSTPFDE ESLDFLISTD
MPVYKIPSGE ITNLPYLEKI GRQAKKVILS TGMAVMDEIH QAVKILQENG TTDISILHCT
TEYPTPYPAL NLNVLHTLKK EFPNLTIGYS DHSVGSEVPI AAAAMGAELI
EKHFTLDNEM EGPDHKASAT PDILAALVKG VRIVEQSLGK FEKEPEEVEV RNKIVARKSI
VAKKAIAKGE VFTEENITVK RPGNGISPME WYKVLGQVSE QDFEEDQNIC
HSAFENQM
```

Fig. 3 cont.   CPS2P

SEQ. ID. NO. 24

MKKICFVTGS RAEYGIMRRL LSYLQDDPEM ELDLVVTAMH LEEKYGMTVK DIEADKRRIV
KRIPLHLTDT SKQTIVKSLA TLTEQLTVLF EEVQYDLVLI LGDRYEMLPV
ANAALLYNIP ICHIHGGEKT MGNFDESIRH AITKMSHLHL TSTDEFRNRV IQLGENPTMY

Fig. 3 cont.   CPS2Q

SEQ. ID. NO. 25

MELGIDFAED YYVVLFHPVT LEDNTAEEQT QALLDALKED GSQCLIIGSN SDTHADKIME
LMHEFVKQDS DSYIFTSLPT RYYHSLVKHS QGLIGNSSSG LIEVPSLQVP
TLNIGNRQFG RLSGPSVVHV GTSKEAIVGG LGQLRDVIDF TNPFEQPDSA LQGYRAIKEF
LSVQASTMKE FYDR

Fig. 3 cont.   CPS2R

SEQ. ID. NO. 26

MKKVAFLGAG TFSDGVLPWL DRTRYELIGY FEDKPISDYR GYPVFGPLQD VLTYLDDGKV
DAVFVTIGDN VKRKEIFDLL AKDHYDALFN IISEQANIFS PDSIKGRGVF
IGFSSFVGAD SYVYDNCIIN TGAIVEHHTT VEAHCNITPG VTINGLCRIG ESTYIGSGST
VIQCIEIAPY TTLGAGTVVL KSLTESGTYV GVPARKIK

Fig. 3 cont.   CPS2S

SEQ. ID. NO. 27

```
MEPICLIPAR SGSKGLPNKN MLFLDGVPMI FHTIRAAIES GCFKKENIYV STDSEVYKEI
CETTGVQVLM RPADLATDFT TSFQLNEHFL QDFSDDQVFV LLQVTSPLRS
GKHVKEAMEL YGKGQADHVV SFTKVDKSPT LFSTLDENGF AKDIAGLGGS YRRQDEKTLY
YPNGAIYISS KQAYLADKTY FSEKTAAYVM TKEDSIDVDD HFDFTGVIGR
IYFDYQRREQ QNKPFYKREL KRLCEQRVHD SLVIGDSRLL ALLLDGFDNI SIGGMTASTA
LENQGLFLAT PIKKVLLSLG VNDLITDYPL HMIEDTIRQL MESLVSKAEQ
VFVTTIAYTL FRDSVSNEEI VQLNDVIVQS ASELGISVID LNEVVEKEAM LDYQYTNDGL
HFNQIGQERV NQLILTSLTR
```

Fig. 3 cont.   CPS2T

SEQ. ID. NO. 28

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ATCGCCAAAC GAAATTGGCA TTATTTGATA TGATAGCAGT TGCAATTTCT GCAATCTTAA CAAGTCATAT
ACCAAATGCT GATTTAAATC GTTCTGGAAT TTTTATCATA
ATGATGGTTC ATTATTTTGC ATTTTTTATA TCTCGTATGC CAGTTGAATT TGAGTATAGA GGTAATCTGA
TAGAGTTTGA AAAAACATTT AACTATAGTA TAATATTTGC
AATTTTTCTT ACGGCAGTAT CATTTTTGTT GGAGAATAAT TTCGCACTTT CAAGACGTGG TGCCGTGTAT
TTCACATTAA TAAACTTCGT TTTGGTATAC CTATTTAACG
TAATTATTAA GCAGTTTAAG GATAGCTTTC TATTTTCGAC AATCTATCAA AAAAAGACGA TTCTAATTAC
AACGGCTGAA CGATGGGAAA ATATGCAAGT TTTATTTGAA
TCACATAAAC AAAATTCAAAA AAATCTTGTT GCATTGGTAG TTTTAGGTAC AGAAATAGAT AAAATTAATT
TATCATTACC GCTCTATTAT TCTGTGGAAG AAGCTATAGA
GTTTTCAACA AGGGAAGTGG TCGACCACGT CTTTATAAAT CTACCAAGTG AGTTTTTAGA CGTAAAGCAA
TTCGTTTCAG ATTTTGAGTT GTTAGGTATT GATGTAAGCG
TTGATATTAA TTCATTCGGT TTTACTGCGT TGAAAAACAA AAAAATCCAA CTGCTAGGTG ACCATAGCAT
TGTAACTTTT TCCACAAATT TTTATAAGCC TAGTCATATC
ATGATGAAAC GACTTTTGGA TATACTCGGA GCGGTAGTCG GGTTAATTAT TTGTGGTATA GTTTCTATTT
TGTTAGTTCC AATTATTCGT AGAGATGGTG GACCGGCTAT
TTTTGCTCAG AAACGAGTTG GACAGAATGG ACGCATATTT ACATTCTACA AGTTTCGATC GATGTATGTT
GATGCTGAGG AGCGCAAAAA AGACTTGCTC AGCCAAAACC
AGATGCAAGG GTGGGTATGT TTTAAAATGG GAAAAACGAT CCTAGAATTA CTCCAATTGG ACATTTCATA
CGCAAAAACA AGTTTAGACG AGTTACCACA GTTTTATAAT
GTTTTAATTG GCGATATGGT TCTAGTTGGT ACACGTCCAC CTACAGTTGA TGAATTTGAA AAATATACTC
CTGGTCAAAA GAGACGATTG AGTTTTAAAC CAGGGATTAC
AGGTCTCTGG CAGGTTAGTG GTCGTAGTAA TATCACAGAC TTCGACGACG TAGTTCGGTT GGACTTAGCA
TACATTGATA ATTGGACTAT CTGGTCAGAT ATTAAAATTT
TATTAAAGAC AGTGAAAGTT GTATTGTTGA GAGAGGGAAG TAAGTAAAAG TATATGAAAG TTTGTTTGGT
CGGTTCTTCA GGGGGACATT TGACTCACTT GTATTTGTTA
AAACCGTTTT GGAAGGAAGA AGAACGTTTT TGGGTAACAT TTGATAAAGA GGATGCAAGA AGTCTTTTGA
AGAATGAAAA AATGTATCCA TGTTACTTTC CAACAAATCG
CAATCTCATT AATTTAGTGA AAAATACTTT CTTAGCTTTC AAAATTTTAC GTGATGAGAA ACCAGATGTT
ATTATTTCAT CTGGTGCGGC CGTTGCTGTC CCCTTCTTTT
ACATCGGAAA ACTATTTGGA GCAAAGACGA TTTATATTGA AGTATTTGAT CGAGTTAATA AATCTACATT
AACTGGAAAA CTAGTTTATC CCGTAACAGA TATTTTTATT
GTTCAGTGGG AAGAAATGAA GAAGGTATAT CCTAAATCTA TTAACTTGGG GAGTATTTTT TAATGATTTT
TGTAACAGTA GGAACTCATG AACAACAGTT TAATCGATTG
ATAAAAGAGA TTGATTTATT GAAAAAAAAT GGAAGTATAA CCGACGAAAT ATTTATTCAA ACAGGATATT
CTGACTATAT TCCAGAATAT TGCAAGTATA AAAAATTTCT
CAGTTACAAA GAAATGGAAC AATATATTAA CAAATCAGAA GTAGTTATTT GCCACGGAGG CCCCGCTACT
TTTATGAATT CATTATCCAA AGGAAAAAAA CAATTATTGT
TTCCTAGACA AAAAAAGTAT GGTGAACATG TAAATGATCA TCAAGTAGAG TTTGTAAGAA GAATTTTACA
AGATAATAAT ATTTTATTTA TAGAAAATAT AGATGATTTG
TTTGAAAAAA TTATTGAAGT TTCTAAGCAA ACTAACTTTA CATCAAATAA TAATTTTTTT TGTGAAAGAT
TAAAACAAAT AGTTGAAAAA TTTAATGAGG ATCAAGAAAA
TGAATAATAA AAAAGATGCA TATTTGATAA TGGCTTATCA TAATTTTTCT CAGATTTTAC TGGAGAGGGA
TACAGATATT ATCATCTTCT CTCAGGAGAA TGCACACCAT
TAGTTCCTTC AGAATACCTG TATAATTATT TTAAATATTC TCAGGATTTA TATGTTGAAT TTACAAAAGA
TGAGCAAAAA TATAAAGAAA ATAGGATATA TGAACGAGTT
AAATGTTACA GATTATTTCC TAATATATCA GAAAAAACTA TTGATAATGT ACTGTTTAGA ATTTTATTAA
GAATGTATCG AGCTTTTGAA TACTATTTAC AAAGATTGTT
GTTTATTGAT AGAATAAAAA ACATGGTCTA AGAATAAGAT TTGGTTCTAA TTGGGTTTCG CTTCCACATG
ATTTTGTGGC AATTCTTTTA TCAAATGAAA ACGAAACAGC
TTATTTATTT AAGTAATCTA AATGTCCAGA TGAACTATTT ATACAGACAA TTATAGAAAA ATATGAATTT
TCAAATAGAT TATCTAAATA TGGAAATTTA AGATATATAA
AGTGGAAAAA ATCAACATCT TCTCCTATTG TCTTTACAGA TGATTCTATT GATGAATTGC TAAATGCAAG
AAATTTAGGT TTTTTATTTG CTAGAAAGTT AAAAATAGAA
AATAAATCTA AATTTAAAGA AATTATTACT AAAAAATAAA ATAGTTGATT TTGTGAGAGT AATGTATGTT
TAAATTATTT AAATATGACC CGGAATATTT TATTTTTAAG
TACTTCTGGT TGATTATTTT TATTCCAGAG CAAAAGTATG TATTTTTATT AATTTTTATG AATTTAATTT
TATTTCATAT AAAATTTTTG AAAACTAAGC TAATATTAAA
AAATGAAATT TTATTGTTTT TATTATGGTC TATATTATGT TTTGTTCAG TAGTCACAAG TATGTTTGTT
GAAATAAATT TTGAAAGATT ATTTGCAGAT TTTACTGCTC
CCATAATTTG GATTATTGCA ATAATGTATT ATAATTGTA TTCATTTATA AATATTGATT ATAAAAAATT
AAAAAATAGT ATCTTTTTA GTTTTTTAGT TTTATTAGGT
ATATCTGCAT TGTATATTAT TCAAAATGGG AAAGATATTG TATTTTTAGA CAGACACCTT ATAGGACTAG
ACTATCTTAT AACAGGCGTC AAAACAAGGT TGGTTGGCTT
TATGAACTAT CCTACGTTAA ATACCACTAC AATTATAGTT TCAATTCCGT TAATCTTTGC ACTTATAAAA
AATAAAATGC AACAATTTTT TTTCTTGTGT CTTGCTTTTA
```

Fig. 4

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TACCGATCTA TTTAAGTGGA TCGAGAATTG GTAGTTTATC GCTAGCAATA TTAATTATAT GCTTGTTATG
GAGATATATA GGTGGAAAAT TTGCTTGGAT AAAAAAGCTA
ATAGTAATAT TTGTAATACT ACTTATTATT TTAAATACTG AATTGCTTTA CCATGAAATT TTGGCTGTTT
ATAATTCTAG AGAATCAAGT AACGAAGCTA GATTTATTAT
TTATCAAGGA AGTATTGATA AAGTATTAGA AAACAATATT TTATTTGGAT ATGGAATATC CGAATATTCA
GTTACGGGAA CTTGGCTCGG AAGTCATTCA GGCTATATAT
CATTTTTTTA TAAATCAGGA ATAGTTGGGT TGATTTTACT GATGTTTTCT TTTTTTTATG TTATAAAAAA
AAGTTATGGA GTTAATGGGG AAACAGCACT ATTTTATTTT
ACATCATTAG CCATATTTTT CATATATGAA ACAATAGATC CGATTATTAT TATATTAGTA CTATTCTTTT
CTTCAATAGG TATTTGGAAT AATATAAATT TTAAAAGGA
TATGGAGACA AAAAATGAAT GATTTAATTT CAGTTATTGT ACCAATTTAT AATGTCCAAG ATTATCTTGA
TAAATGTATT AACAGTATTA TTAACCAAAC ATATACTAAT
TTAGAGGTTA TTCTCGTAAA TGATGGAAGT ACTGATGATT CTGAGAAAAT TTGCTTAAAC TATATGAAGA
ACGATGGAAG AATTAAATAT TACAAGAAAA TTAATGGCGG
TCTAGCAGAT GCTCGAAATT TCGGACTAGA ACATGCAACA GGTAAATATA TTGCTTTTGT CGATTCTGAT
GACTATATAG AAGTTGCAAT GTTCGAGAGA ATGCATGATA
ATATAACTGA GTATAATGCC GATATAGCAG AGATAGATTT TTGTTTAGTA GACGAAAACG GGTATACAAA
GAAAAAAAGA AATAGTAATT TTCATGTCTT AACGAGAGAA
GAGACTGTAA AAGAATTTTT GTCAGGATCT AATATAGAAA ATAATGTTTG GTGCAAGCTT TATTCACGAG
ATATTATAAA AGATATAAAA TTCCAAATTA ATAATAGAAG
TATTGGTGAG GATTTGCTTT TTAATTTGGA GGTCTTGAAC AATGTAACAC GTGTAGTAGT TGATACTAGA
GAATATTATT ATAATTATGT CATTCGTAAC AGTTCGCTTA
TTAATCAGAA ATTCTCTATA AATAATATTG ATTTAGTCAC AAGATTGGAG AATTACCCCT TTAAGTTAAA
AAGAGAGTTT AGTCATTATT TTGATGCAAA AGTTATTAAA
GAGAAGGTTA AATGTTTAAA CAAAATGTAT TCAACAGATT GTTTGGATAA TGAGTTCTTG CCAATATTAG
AGTCTTATCG AAAAGAAATA CGTAGATATC CATTTATTAA
AGCGAAAAGA TATTTATCAA GAAAGCATTT AGTTACGTTG TATTTGATGA AATTTTCGCC TAAACTATAT
GTAATGTTAT ATAAGAAATT TCAAAAGCAG TAGAGGTAAA
AATGGATAAA ATTAGTGTTA TTGTTCCAGT TTATAATGTA GATAAATATT TAAGTAGTTG TATAGAAAGC
ATTATTAATC AAAATTATAA AAATATAGAA ATATTATTGA
TAGATGATGG CTCTGTAGAT GATTCTGCTA AAATATGCAA GGAATATGCA GAAAAAGATA AAAGAGTAAA
AATTTTTTTC ACTAATCATA GTGGAGTATC AAATGCTAGA
AATCATGGAA TAAAGCGGAG TACAGCTGAA TATATTATGT TTGTTGACTC TGATGATGTT GTTGATAGTA
GATTAGTAGA AAAATTATAT TTTAATATTA TAAAAAGTAG
AAGTGATTTA TCTGGTTGTT TGTACGCTAC TTTTTCAGAA AATATAAATA ATTTTGAAGT GAATAATCCA
AATATTGATT TTGAAGCAAT TAATACCGTG CAGGACATGG
GAGAAAAAAA TTTTATGAAT TTGTATATAA ATAATATTTT TTCTACTCCT GTTTGTAAAC TATATAAGAA
AAGATACATA ACAGATCTTT TTCAAGAGAA TCAATGGTTA
GGAGAAGATT TACTTTTTAA TCTGCATTAT TTAAAGAATA TAGATAGAGT TAGTTATTTG ACTGAACATC
TTTATTTTTA TAGGAGAGGT ATACTAAGTA CAGTAAATTC
TTTTAAAGAA GGTGTGTTTT TGCAATTGGA AAAATTTGCAA AAACAAGTGA TAGTATTGTT TAAGCAAATA
TATGGTGAGG ATTTTGACGT ATCAATTGTT AAAGATACTA
TACGTTGGCA AGTATTTTAT TATAGCTTAC TAATGTTTAA ATACGGAAAA CAGTCTATTT TTGACAAATT
TTTAATTTTT AGAAATCTTT ATAAAAATA TTATTTTAAC
TTGTTAAAAG TATCTAACAA AAATTCTTTG TCTAAAAATT TTTGTATAAG AATTGTTTCG AACAAAGTTT
TTAAAAAAAT ATTATGGTTA TAATAGGAAG ATATCATGGA
TACTATTAGT AAAATTCTA TAATTGTACC TATATATAAT GTAGAAAAAT ATTTATCTAA ATGTATAGAT
AGCATTGTAA ATCAGACCTA CAAACATATA GAGATTCTTC
TGGTGAATGA CGGTAGTACG GATAATTCGG AAGAAATTTG TTTAGCATAT GCGAAGAAAG ATAGTCGCAT
TCGTTATTTT AAAAAAGAGA ACGGCGGGCT ATCAGATGCC
CGTAATTATG GCATAAGTCG CGCCAAGGGT GACTACTTAG CTTTTATAGA CTCAGATGAT TTTATTCATT
CGGAGTTCAT CCAACGTTTA CACGAAGCAA TTGAGAGAGA
GAATGCCCTT GTGGCAGTTG CTGGTTATGA TAGGGTAGAT GCTTCGGGGC ATTTCTTAAC AGCAGAGCCG
CTTCCTACAA ATCAGGCTGT TCTGAGCGGC AGGAATGTTT
GTAAAAAGCT GCTAGAGGCG GATGGTCATC GCTTTGTGGT GGCCTGTAAT AAACTCTATA AAAAAGAACT
ATTTGAAGAT TTTCGATTTG AAAAGGGTAA GATTCATGAA
GATGAATACT TCACTTATCG CTTGCTCTAT GAGTTAGAAA AAGTTGCAAT AGTTAAGGAG TGCTTGTACT
ATTATGTTGA CCGAGAAAAT AGTATCACAA CTTCTAGCAT
GACTGACCAT CGCTTCCATT GCCTATCGGA ATTTCAAAAT GAACGAATGG ACTTCTATGA AAGTAGAGGA
GATAAAGAGC TCTTACTAGA GTGTTATCGT TCATTTTTAG
CCTTTGCTGT TTTGTTTTTA GGCAAATATA ATCATTGGTT GAGCAAACAG CAAAAGAAGC TT
```

Fig. 4 cont.

SEQ. ID. NO. 29

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RQTKLALFDM IAVAISAILT SHIPNADLNR SGIFIIMMVH YFAFFISRMP VEFEYRGNLI
EFEKTFNYSI IFAIFLTAVS FLLENNFALS RRGAVYFTLI NFVLVYLFNV
IIKQFKDSFL FSTIYQKKTI LITTAERWEN MQVLFESHKQ IQKNLVALVV LGTEIDKINL
SLPLYYSVEE AIEFSTREVV DHVFINLPSE FLDVKQFVSD FELLGIDVSV
DINSFGFTAL KNKKIQLLGD HSIVTFSTNF YKPSHIMMKR LLDILGAVVG LIICGIVSIL
LVPIIRRDGG PAIFAQKRVG QNGRIFTFYK FRSMYVDAEE RKKDLLSQNQ
MQGWVCFKMG KTILELLQLD ISYAKTSLDE LPQFYNVLIG DMSLVGTRPP TVDEFEKYTP
GQKRRLSFKP GITGLWQVSG RSNITDFDDV VRLDLAYIDN WTIWSDIKIL
LKTVKVVLLR EGSK
```

Fig. 4 cont.   CPS1E

SEQ. ID. NO. 30

MKVCLVGSSG GHLTHLYLLK PFWKEEERFW VTFDKEDARS LLKNEKMYPC YFPTNRNLIN
LVKNTFLAFK ILRDEKPDVI ISSGAAVAVP FFYIGKLFGA KTIYIEVFDR
VNKSTLTGKL VYPVTDIFIV QWEEMKKVYP KSINLGSIF

Fig. 4 cont.   CPS1F

SEQ. ID. NO. 31

```
MIFVTVGTHE QQFNRLIKEI DLLKKNGSIT DEIFIQTGYS DYIPEYCKYK KFLSYKEMEQ
YINKSEVVIC HGGPATFMNS LSKGKKQLLF PRQKKYGEHV NDHQVEFVRR
ILQDNNILFI ENIDDLFEKI IEVSKQTNFT SNNNFFCERL KQIVEKFNED QENE
```

Fig. 4 cont.   CPS1G

SEQ. ID. NO. 32

```
MFKLFKYDPE YFIFKYFWLI IFIPEQKYVF LLIFMNLILF HIKFLKTKLI LKNEILLFLL
WSILCFVSVV TSMFVEINFE RLFADFTAPI IWIIAIMYYN LYSFINIDYK
KLKNSIFFSF LVLLGISALY IIQNGKDIVF LDRHLIGLDY LITGVKTRLV GFMNYPTLNT
TTIIVSIPLI FALIKNKMQQ FFFLCLAFIP IYLSGSRIGS LSPLAILIIC
LLWRYIGGKF AWIKKLIVIF VILLIILNTE LLYHEILAVY NSRESSNEAR FIIYQGSIDK
VLENNILFGY GISEYSVTGT WLGSHSGYIS FFYKSGIVGL ILLMFSFFYV
IKKSYGVNGE TALFYFTSLA IFFIYETIDP IIIILVLFFS SIGIWNNINF KKDMETKNE
```

Fig. 4 cont.   CPS1H

SEQ. ID. NO. 33

```
MNDLISVIVP IYNVQDYLDK CINSIINQTY TNLEVILVND GSTDDSEKIC LNYMKNDGRI
KYYKKINGGL ADARNFGLEH ATGKYIAFVD SDDYIEVAMF ERMHDNITEY
NADIAEIDFC LVDENGYTKK KRNSNFHVLT REETVKEFLS GSNIENNVWC KLYSRDIIKD
IKFQINNRSI GEDLLFNLEV LNNVTRVVVD TREYYYNYVI RNSSLINQKF
SINNIDLVTR LENYPFKLKR EFSHYFDAKV IKEKVKCLNK MYSTDCLDNE FLPILESYRK
EIRRYPFIKA KRYLSRKHLV TLYLMKFSPK LYVMLYKKFQ KQ
```

Fig. 4 cont.   CPS1I

SEQ. ID. NO. 34

```
MDKISVIVPV YNVDKYLSSC IESIINQNYK NIEILLIDDG SVDDSAKICK EYEKDKRVKI
FFTNHSGVSN ARNHGIKRST AEYIMFVDSD DVVDSRLVEK LYFNIIKSRS
DLSGCLYATF SENINNFEVN NPNIDFEAIN TVQDMGEKNF MNLXXNNIFS TPVCXLYQKR
YITDLFQENQ WLGEDLLFNL HYLKNIDRVS YLTEHLYFYR RGILSTVNSF
KEGVFLQLEN LQKQVIVLFK QIYGEDFDVS IVKDTIRWQV FYYSLLMFKY GKQSIFDKFL
IFRNLYKKYY FNLLKVSNKN SLSKNFCIRI VSNKVFKKIL WL
```

Fig. 4 cont.   CPS1J

SEQ. ID. NO. 35

```
MDTISKISII VPIYNVEKYL SKCIDSIVNQ TYKHIEILLV NDGSTDNSEE ICLAYAKKDS
RIRYFKKENG GLSDARNYGI SRAKGDYLAF IDSDDFIHSE FIQRLHEAIE
RENALVAVAG YDRVDASGHF LTAEPLPTNQ AVLSGRNVCK KLLEADGHRF VVACNKLYKK
ELFEDFRFEK GKIHEDEYFT YRLLYELEKV AIVKECLYYY VDRENSITTS
SMTDHRFHCL LEFQNERMDF YESRGDKELL LECYRSFLAF AVLFLGKYNH WLSKQQKK
```

Fig. 4 cont.   CPS1K

SEQ. ID. NO. 36

Fig. 5
DNA Sero type 9

WO 00/05378

PCT/NL99/00460

40/59

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AAGCTTATCG  TCAAGGTGTT  CGCTATATCG  TGGCGACATC  TCATAGACGA  AAAGGGATGT
TTGAAACACC  AGAAAAAGTT  ATCATGACTA  ACTTTCTTCA  ATTTAAAGAC
GCAGTAGCAG  AAGTTTATCC  TGAAATACGA  TTGTGCTATG  GTGCTGAATT  GTATTATAGT
AAAGATATAT  TAAGCAAACT  TGAAAAAAAG  AAAGTACCCA  CACTTAATGG
CTCGCGCTAT  ATTCTTTTGG  AGTTCAGTAG  TGATACTCCT  TGGAAAGAGA  TTCAAGAAGC
AGTGAACGAA  GTGACGCTAC  TTGGGCTAAC  TCCCGTACTT  GCCCATATAG
AACGATATGA  CGCCCTAGCG  TTTCATGCAG  AGAGAGTAGA  AGAGTTAATT  GACAAGGGAT
GCTATACTCA  GGTAAATAGT  AATCATGTGC  TGAAGCCCAC  TTTAATTGGT
GATCGAGCAA  AAGAATTTAA  AAAACGTACT  CGGTATTTTT  TAGAGCAGGA  TTTAGTACAT
TGTGTTGCTA  GCGATATGCA  TAATTTATCT  AGTAGACCTC  CGTTTATGAG
GGAGGCTTAT  AAGTTGCTAA  CAGAGGAATT  TGGCAAAGAT  AAAGCGAAAG  CGTTGCTAAA
AAAGAATCCT  CTTATGCTAT  TAAAAAACCA  GGCGATTTAA  ACTGGTTACT
CTAGATTGTG  GAGAGAAAAA  TGGATTTAGG  AACTGTTACT  GATAAACTGT  TAGAACGCAA
CAGTAAACGA  TTGATACTCG  TGTGCATGGA  TACGTGTCTT  CTTATAGTTT
CCATGATTTT  GAGCAGACTG  TTTTTGGATG  TTATTATTGA  CATACCAGAT  GAACGCTTCA
TTCTTGCAGT  TTTATTCGTA  TCAATTTTAT  ATTTGATTCT  ATCGTTTAGA
TTAAAAGTCT  TTTCATTAAT  TACGCGTTAC  ACAGGGTATC  AGAGTTATGT  AAAAATAGGA
CTTAGTTTAA  TATCTGCGCA  TTCATTGTTT  TTAATTATCT  CAATGGTGTT
GTGGCAGGCT  TTTAGTTATC  GTTTCATCTT  AGTATCCTTA  TTTTTGTCGT  ATGTAATGCT
CATTACTCCG  AGGATTGTTT  GGAAAGTCTT  ACATGAGACG  AGAAAAAATG
CTATCCGTAA  GAAGGATAGC  CCACTAAGAA  TCTTAGTAGT  AGGTGCTGGA  GATGGTGGTA
ATATTTTTAT  CAATACTGTC  AAAGATCGAA  AATTGAATTT  TGAAATTGTC
GGTATCGTTG  ATCGTGATCC  AAATAAACTT  GGAACATTTA  TCCGTACGGC  TAAAGTTTTA
GGAAACCGTA  ATGATATTCC  ACGACTGGTA  GAGGAATTAG  CTGTTGACCA
AGTGACGATT  GCCATCCCTT  CTTTAAATGG  TAAGGAGCGA  GAGAAGATTG  TTGAAATCTG
TAACACTACA  GGAGTGACCG  TCAATAATAT  GCCGAGTATT  GAAGACATTA
TGGCGGGGAA  CATGTCTGTC  AGTGCCTTTC  AGGAAATTGA  CGTAGCAGAC  CTTCTTGGTC
GACCAGAGGT  TGTTTTGGAT  CAGGATGAAT  TGAATCAGTT  TTTCCAAGGG
AAAACAATCC  TTGTCACAGG  AGCAGGTGGC  TCTATCGGTT  CAGAGCTATG  TCGTCAAATT
GCTAAGTTTA  CGCCTAAACG  CTTGTTGTTG  CTTGGACATG  GAGAAAAATTC
AATCTATCTC  ATTCATCGAG  AGTTACTGGA  AAAGTACCAA  GGTAAGATTG  AGTTGGTCCC
TCTCATTGCA  GATATTCAAG  ATAGAGAATT  GATTTTTAGC  ATAATGGCTG
AATATCAACC  CGATGTTGTT  TATCATGCTG  CAGCACATAA  GCATGTTCCT  TTGATGGAAT
ATAATCCACA  TGAAGCAGTG  AAGAATAATA  TTTTTGGAAC  GAAGAATGTG
GCTGAGGCGG  CTAAAACTGC  AAAGGTTGCC  AAATTTGTTA  TGGTTTCAAC  AGATAAAGCT
GTTAATCCAC  CAAATGTCAT  GGGAGCGACT  AAACGTGTTG  CAGAAATGAT
TGTTACAGGT  TTAAACGAGC  CAGGTCAGAC  TCAATTTGCG  GCAGTCCGGT  TTGGGAATGT
TCTAGGTAGT  CGTGGAAGTG  TTGTTCCGCT  ATTCAAAGAG  CAAATTAGAA
AAGGTGGACC  TGTTACGGTT  ACCGACTTTA  GGATGACTCG  TTATTTCATG  ACGATTCCTG
AGGCAAGTCG  TTTGGTTATC  CAAGCTGGAC  ATTTGGCAAA  AGGTGGAGAA
ATATTTGTCT  TGGATATGGG  CGAGCCAGTA  CAAATCCTGG  AATTGGCAAG  AAAAGTTATC
TTGTTAAGTG  GACACACAGA  GGAAGAAATC  GGGATTGTAG  AATCTGGAAT
CAGACCAGGC  GAGAAACTCT  ACGAGGAATT  ATTATCAACA  GAAGAACGTG  TCAGCGAACA
GATTCATGAA  AAAATATTTG  TGGGTCGCGT  TACAAATAAG  CAGTCGGACA
TTGTCAATTC  ATTTATCAAT  GGATTACTCC  AAAAAGATAG  AAATGAATTA  AAAAATATGT
TGATTGAATT  TGCAAAACAA  GAATAAGAAA  GTAAAAAATA  TTTTTACTTT
CCTAGAGTTT  AAACGATGTT  TAAGTTCTAG  GAAGGTTAGA  ATACCTAATT  AACAACAATA
TTACTATTTA  TTAAGAGTCA  GATAATAGCA  ACTAAGTGCT  ACAAACTATC
TTTATAATAA  GTATATTTGG  TCAAAGGGA  GATGTGAAAT  GTATCCAATT  TGTAAACGTA
TTTTAGCAAT  TATTATCTCA  GGGATTGCTA  TTGTTGTTCT  GAGTCCAATT
TTATTATTGA  TTGCATTGGC  AATTAAATTA  GATTCTAAAG  GTCCGGTATT  ATTTAAACAA
AAGCGGGTTG  GTAAAAACAA  GTCATACTTT  ATGATTTATA  AATTCCGTTC
TATGTACGTT  GACGCACCAA  GTGATATGCC  GACTCATCTA  TTAAAGGATC  CTAAGGCGAT
GATTACCAAG  GTGGGCGCGT  TTCTCAGAAA  AACAAGTTTA  GATGAACTGC
CACAGCTTTT  TAATATTTTT  AAAGGTGAAA  TGGCGATTGT  TGGTCCACGC  CCAGCCTTAT
GGAATCAATA  TGACTTAATT  GAAGAGCGAG  ATAAATATGG  TGCAAATGAT
ATTCGTCCTG  GACTAACCGG  TTGGGCTCAA  ATTAATGGTC  GTGATGAATT  GGAAATTGAT
GAAAAGTCAA  AATTAGATGG  ATATTATGTT  CAAAATATGA  GTCTAGGTTT
GGATATTAAA  TGTTTCTTAG  GTACATTCCT  CAGTGTAGCC  AGAAGCGAAG  GTGTTGTTGA
AGGTGGAACA  GGGCAGAAAG  GAAAAGGATG  AAATTTTCAG  TATTAATGTC
GGTCTATGAG  AAAGAAAAAC  CAGAGTTTCT  TAGGGAATCT  TTGGAAAGCA  TCCTTGTCAA
TCAAACAATG  ATTCCAACGG  AGGTTGTCTT  GGTAGAGGAT  GGGCCACTCA
ATCAGAGCTT  ATATAGTATT  TTAGAAGAAT  TTAAAGTCG  ATTTTCATTT  TTTAAAACGA
TAGCCTTGGA  AAAGAATTCG  GGTTTAGGAA  TTGCACTGAA  TGAAGGTTTG
AAACATTGTA  ATTATGAGTG  GGTTTGCACG  AAATGGATTC  TGATGATGTT  GCATATACAT
ACACGTTTTG  AAAAGCAAGT  TAACTTTATA  AAACAAAACC  CGACTATAGA
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TATTGAGATA GATGAGTTCT TAAATTCTAC TAGTGAAATA GTTTCTCATA AAAATGTTCC
AACCCAGCAC GATGAAATAT TAAAGATGGC AAGGCGGGAG AAATCCATGT
GCCACATGAC TGTAATGTTT AAAAAGAAAA GTGTCGAGAG AGCAGGGGGG TATCAAACAC
TTCCGTACGT AGAAGATTAT TTCCTTTGGG TGCGCATGAT TGCTTCAGGA
TCGAAATTTG CAAACATTGA TGAAACACTA GTTCTTGCAC GTGTTGGAAA TGGGATGTTC
AATAGGAGGG GGAACAGAGA ACAAATTAAC AGTTGGACAT TACTAATTGA
ATTTATGTTA GCTCAAGGAA TTGTTACACC ACTAGATGTA TTTATTAATC AAATTTACAT
TAGGGTCTTT GTTTATATGC CAACTTGGAT AAAGAAACTC ATTTATGGAA
AAATCTTAAG GAAATAGTAT GATTACAGTA TTGATGGCTA CATATAATGG AAGCCCATTT
ATAATAAAAC AGTTAGATTC AATTCGAAAT CAAAGTGTAT CAGCAGACAA
AGTTATTATT TGGGATGATT GCTCGACAGA TGATACAATA AAAATAATAA AAGATTATAT
AAAAAAATAT TCTTTGGATT CATGGGTTGT CTCTCAAAAT AAATCTAATC
AGGGGCATTA TCAAACATTT ATAAATTTGA CAAAGTTAGT TCAGGAAGGA ATAGTCTTTT
TTTCAGATCA AGATGATATT TGGGACTGTC ATAAAATTGA GACAATGCTT
CCAATCTTTG ACAGAGAAAA TGTATCAATG GTGTTTTGCA AATCCAGATT GATTGATGAA
AACGGAAATA TTATCAGTAG CCCAGATACT TCGGATAGAA TCAATACGTA
CTCTCTAGA
```

Fig. 5 cont.   SEQ. ID. NO. 37

```
AYRQGVRYIV ATSHRRKGMF ETPEKVIMTN FLQFKDAVAE VYPEIRLCYG AELYYSKDIL
SKLEKKKVPT LNGSRYILLE FSSDTPWKEI QEAVNEVTLL GLTPVLAHIE
RYDALAFHAE RVEELIDKGC YTQVNSNHVL KPTLIGDRAK EFKKRTRYFL EQDLVHCVAS
DMHNLSSRPP FMREAYKLLT EEFGKDKAKA LLKKNPLMLL KNQAI
```

Fig. 5 cont.   **CPS9D**

SEQ. ID. NO. 38

```
MDLGTVTDKL  LERNSKRLIL  VCMDTCLLIV  SMILSRLFLD  VIIDIPDERF  ILAVLFVSIL
YLILSFRLKV  FSLITRYTGY  QSYVKIGLSL  ISAHSLFLII  SMVLWQAFSY
RFILVSLFLS  YVMLITPRIV  WKVLHETRKN  AIRKKDSPLR  ILVVGAGDGG  NIFINTVKDR
KLNFEIVGIV  DRDPNKLGTF  IRTAKVLGNR  NDIPRLVEEL  AVDQVTIAIP
SLNGKEREKI  VEICNTTGVT  VNNMPSIEDI  MAGNMSVSAF  QEIDVADLLG  RPEVVLDQDE
LNQFFQGKTI  LVTGAGGSIG  SELCRQIAKF  TPKRLLLLGH  GENSIYLIHR
ELLEKYQGKI  ELVPLIADIQ  DRELIFSIMA  EYQPDVVYHA  AAHKHVPLME  YNPHEAVKNN
IFGTKNVAEA  AKTAKVAKFV  MVSTDKAVNP  PNVMGATKRV  AEMIVTGLNE
PGQTQFAAVR  FGNVLGSRGS  VVPLFKEQIR  KGGPVTVTDF  RMTRYFMTIP  EASRLVIQAG
HLAKGGEIFV  LDMGEPVQIL  ELARKVILLS  GHTEEEIGIV  ESGIRPGEKL
YEELLSTEER  VSEQIHEKIF  VGRVTNKQSD  IVNSFINGLL  QKDRNELKNM  LIEFAKQE
```

Fig. 5 cont.   CPS9E

SEQ. ID. NO. 39

MYPICKRILA IIISGIAIVV LSPILLLIAL AIKLDSKGPV LFKQKRVGKN KSYFMIYKFR
SMYVDAPSDM PTHLLKDPKA MITKVGAFLR KTSLDELPQL FNIFKGEMAI
VGPRPALWNQ YDLIEERDKY GANDIRPGLT GWAQINGRDE LEIDEKSKLD GYYVQNMSLG
LDIKCFLGTF LSVARSEGVV EGGTGQKGKG

Fig. 5 cont.   CPS9F

SEQ. ID. NO. 40

```
MKFSVLMSVY EKEKPEFLRE SLESILVNQT MIPTEVVLVE DGPLNQSLYS ILEEFKSRFS
FFKTIALEKN SGLGIALNEG LKHCNYEWVC TKWILMMLHI HTRFEKQVNF
IKQNPTIDIE IDEFLNSTSE IVSHKNVPTQ HDEILKMARR EKSMCHMTVM FKKKSVERAG
GYQTLPYVED YFLWVRMIAS GSKFANIDET LVLARVGNGM FNRRGNREQI
NSWTLLIEFM LAQGIVTPLD VFINQIYIRV FVYMPTWIKK LIYGKILRK
```

Fig. 5 cont.   CPS9G

SEQ. ID. NO. 41

```
MITVLMATYN GSPFIIKQLD SIRNQSVSAD KVIIWDDCST DDTIKIIKDY IKKYSLDSWV
VSQNKSNQGH YQTFINLTKL VQEGIVFFSD QDDIWDCHKI ETMLPIFDRE
NVSMVFCKSR LIDENGNIIS SPDTSDRINT YSL
```

Fig. 5 cont.   CPS9H

SEQ. ID. NO. 42

```
CTGCAGCACA TAAGCATGTT CCATTGATGG AATATAATCC ACATGAAGCA GTGAAGAATA
ATATTTTTGG AACGAAGAAT GTGGCTGAGG CGGCTAAAAC TGCAAAGGTT
GCCAAATTTG TTATGGTTTC AACAGATAAA GCTGTTAATC CGCCAAATGT CATGGGAGCG
ACTAAACGTG TTGCAGAAAT GATTGTAACA GGTTTAAACG AGCCAGGTCA
GACTCAATTT GCGGCAGTCC GTTTTGGGAA TGTTCTAGGT AGTCGTGGAA GTGTTGTTCC
GCTATTCAAA GAGCAAATTA GAAAGGTGG ACCTGTTACG GTTACCGACT
TTAGGATGAC TCGTTATTTC ATGACGATTC CTGAGGCAAG TCGTTTGGTT ATCCAAGCTG
GACATTTGGC AAAAGGTGGA GAAATCTTTG TCTTGGATAT GGGTGAGCCA
GTACAAATCC TGGAATTGGC AAGAAAAGTT ATCTTGTTAA GCGGACATAC AGAGGAAGAA
ATCGGGATTG TAGAATCTGG AATCAGACCA GGCGAGAAAC TCTACGAGGA
ATTGTTATCA ACAGAAGAAC GTGTCAGCGA ACAGATTCAT GAAAAATAT TTGTGGGTCG
CGTTACAAAT AAGCAGTCGG ACATTGTCAA TTCATTTATC AATGGATTAC
TCCAAAAAGA TAGAAATGAA TTAAAGATA TGTTGATTGA ATTTGCAAAA CAAGAATAAG
AAAGTAAAAA ATATTTTAC TTTCCTAGAG TTTAAACGAT GTTTAAGTTC
TAGGAAGGTT GGAATTGCTT TCGTGGAGGT GATAGATAGA AACCTATATA TTTGTAGAAG
AAAGGATATT AAACTAAAGG TGAATCGGAA CATAAAGTTT AGATAGAGTT
GGTATTTAAT GCCAAACAGG TGAATGCAAC CTCTCGCTCG TTACTAAGCA GGAGATAGTA
AAGTTGCTTG AAAGAGAGTT TGTTAATCAG TATAAGTAGG CTAAAGTGAG
AATATATATC TATTATTATC GGTAATGATA CTATTATTGA GAATTATTGT AGTGGGGATA
AAAATAATTT TTGGTGATTT TATCGTCCGA CTTAAAGGTG GGTTAAAAAA
GTACTTATAT TCTTTTAGAA TTGATGAAAA ATATGGGGGA ATATAATATT TATAGGAGAT
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AGCAACCAGT AAATATTTTC AGAAGATAGA ATCAAGAAGA GGTGAATTAT TTATTAAATT
CTTTATGGAT AAGTTACTTG CGCTTATCCT ATTATTGCTA TTATCCCCAG
TAATCATTAT ATTAGCTATT TGGATAAAAT TAGATAGTAA GGGGCCAATT TTTTATCGCC
AAGAACGTGT TACGAGATAT GGTCGAATTT TTAGAATATT TAAGTTTAGA
ACAATGATTT CTGATGCGGA TAAAGTCGGA AGTCTTGTCA CAGTCGGTCA AGATAATCGT
ATTACGAAAG TCGGTCACAT TATCAGAAAA TATCGGCTGG ACGAAGTGCC
CCAACTTTTT AATGTTTTAA TGGGGGATAT GAGCTTTGTA GGTGTAAGAC CAGAAGTACA
AAAATATGTA AATCAGTATA CTGATGAAAT GTTTGCGACG TTACTTTTAC
CTGCAGGAAT TACTTCACCA GCGAGTATTG CATATAAGGA TGAAGATATT GTTTTAGAAG
AATATTGTTC TCAAGGCTAT AGTCCTGATG AAGCATATGT TCAAAAAGTA
TTACCAGAAA AAATGAAGTA CAATTTGGAA TATATCAGAA ACTTTGGAAT TATTTCTGAT
TTTAAAGTAA TGATTGATAC AGTAATTAAA GTAATAAAAT AGGAGATTAA
AATGACAAAA AGACAAAATA TTCCATTTTC ACCACCAGAT ATTACCCAAG CTGAAATTGA
TGAAGTTATT GACACACTAA AATCTGGTTG GATTACAACA GGACCAAAGA
CAAAAGAGCT AGAACGTCGG CTATCAGTAT TTACAGGAAC CAATAAAACT GTGTGTTTAA
ATTCTGCTAC TGCAGGATTG GAACTAGTCT TACGAATTCT TGGTGTTGGA
CCCGGAGATG AAGTTATTGT TCCTGCTATG ACCTATACTG CCTCATGTAG TGTCATTACT
CATGTAGGAG CAACTCCTGT GATGGTTGAT ATTCAAAAAA ACAGCTTTGA
GATGGAATAT GATGCTTTGG AAAAAGCGAT TACTCCGAAA ACAAAAGTTA TCATTCCTGT
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AAAACAAACG CTCTTTGTAT GTTGCTTCTG ATAATAAATG GCAGAAACTT TTTGGGCGAG
TTATTATCCT ATCTGATAGT GCACACTCAC TAGGTGCTAG TTATAAGGGA
AAACCAGCGG GTTCCCTAGC AGATTTTACC TCATTTTCTT CCATGCAGT TAAGAATTTT
ACAACTGCTG AAGGAGGTAG TGTGACATGG AGATCACATC CTGATTTGGA
TGACGAAGAG ATGTATAAAG AGTTTCAGAT TTACTCTCTT CATGGTCAGA CAAAGGATGC
ATTAGCTAAG ACACAATTAG GGTCATGGGA ATATGACATT GTTATTCCTG
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ACCCATCTTT GTTGAATCGT CGCAGAGAAA TCATTGAGAA ATACAATGCT
GGCTTTGAGG GGACTTCGAT TAAGCCGTTG GTACACCTGA CGGAAGATAA ACAATCGTCT
ATGCACTTGT ATATCACGCA TCTACAAGGC TATACTTTAG AACAACGAAA
TGAAGTCATT CAAAAAATGG CTGAAGCAGG TATTGCGTGC AATGTTCACT ACAAACCATT
ACCTCTTCTC ACAGCCTACA AGAATCTTGG TTTTGAAATG AAAGATTTTC
CGAATGCCTA TCAGTATTTT GAAAATGAAG TTACACTGCC TCTTCATACC AACTTGAGTG
ATGAAGATGT GGAGTATGTG ATAGAAATGT TTTTAAAAAT TGTTAGTAGA
GATTAGTTAT TTTGGAAGGA GATATGGTGG AAAGAGATAT GGTGGAAAGA GACACGTTGG
TATCTATAAT AATGCCCTCG TGGAATACAG CTAAGTATAT ATCTGAATCA
ATCCAGTCAG TGTTGGACCA AACACACCAA AATTGGGAAC TTATAATCGT TGATGATTGT
TCTAATGACG AAACTGAAAA AGTTGTTTCG CATTTCAAAG ATTCAAGAAT
```

                                                    DNA Serotype 7

Fig. 6

```
AAAGTTTTTT AAAAATTCGA ATAATTTAGG GGCAGCTCTA ACACGAAATA AGGCACTAAG
AAAAGCTAGA GGTAGGTGGA TTGCGTTCTT GGATTCAGAT GATTTATGGC
ACCCGAGTAA GCTAGAAAAA CAGCTTGAAT TTATGAAAAA TAATGGATAT TCATTTACTT .
ATCACAATTT TGAAAAGATT GATGAATCTA GTCAGTCTTT ACGTGTCCTG
GTGTCAGGAC CAGCAATTGT GACTAGAAAA ATGATGTACA ATTACGGCTA TCCAGGGTGT
TTGACTTTCA TGTATGATGC AGACAAAATG GGTTTAATTC AGATAAAAGA
TATAAAGAAA AATAACGATT ATGCGATATT ACTTCAATTG TGTAAGAAGT ATGACTGTTA
TCTTTTAAAT GAAAGTTTAG CTTCGTATCG AATTAGAAAA AA
```

Fig. 6 cont.

SEQ. ID. NO. 43

```
AAHKHVPLME YNPHEAVKNN IFGTKNVAEA AKTAKVAKFV MVSTDKAVNP PNVMGATKRV
AEMIVTGLNE PGQTQFAAVR FGNVLGSRGS VVPLFKEQIR KGGPVTVTDF
RMTRYFMTIP EASRLVIQAG HLAKGGEIFV LDMGEPVQIL ELARKVILLS GHTEEEIGIV
ESGIRPGEKL YEELLSTEER VSEQIHEKIF VGRVTNKQSD IVNSFINGLL
QKDRNELKDM LIEFAKQE
```

Fig. 6 cont.   CPS7E

SEQ. ID. NO. 44

```
MTRVELITRE FFKKNEATSK YFQKIESRRG ELFIKFFMDK LLALILLLLL SPVIIILAIW
IKLDSKGPIF YRQERVTRYG RIFRIFKFRT MISDADKVGS LVTVGQDNRI
TKVGHIIRKY RLDEVPQLFN VLMGDMSFVG VRPEVQKYVN QYTDEMFATL LLPAGITSPA
SIAYKDEDIV LEEYCSQGYS PDEAYVQKVL PEKMKYNLEY IRNFGIISDF
KVMIDTVIKV IK
```

Fig. 6 cont.   CPS7F

SEQ. ID. NO. 45

```
MTKRQNIPFS PPDITQAEID EVIDTLKSGW ITTGPKTKEL ERRLSVFTGT NKTVCLNSAT
AGLELVLRIL GVGPGDEVIV PAMTYTASCS VITHVGATPV MVDIQKNSFE
MEYDALEKAI TPKTKVIIPV DLAGIPCDYD KIYTIVENKR SLYVASDNKW QKLFGRVIIL
SDSAHSLGAS YKGKPAGSLA DFTSFSFHAV KNFTTAEGGS VTWRSHPDLD
DEEMYKEFQI YSLHGQTKDA LAKTQLGSWE YDIVIPGYKC NMTDIMAGIG LVQLERYPSL
LNRRREIIEK YNAGFEGTSI KPLVHLTEDK QSSMHLYITH LQGYTLEQRN
EVIQKMAEAG IACNVHYKPL PLLTAYKNLG FEMKDFPNAY QYFENEVTLP LHTNLSDEDV
EYVIEMFLKI VSRD
```

Fig. 6 cont.   CPS7G

SEQ. ID. NO. 46

```
MVERDMVERD TLVSIIMPSW NTAKYISESI QSVLDQTHQN WELIIVDDCS NDETEKVVSH
FKDSRIKFFK NSNNLGAALT RNKALRKARG RWIAFLDSDD LWHPSKLEKQ
LEFMKNNGYS FTYHNFEKID ESSQSLRVLV SGPAIVTRKM MYNYGYPGCL TFMYDADKMG
LIQIKDIKKN NDYAILLQLC KKYDCYLLNE SLASYRIRK
```


Fig. 6 cont.　　　　　　　　　　　　　　　CPS7H

SEQ. ID. NO. 47

```
                                                    *
Cps2J    MEKVSIIVPI FNTEKYLREC LDSIISQSYT NLEILLIDDG SSDSSTDICL EYAEQDGRIK    60
         |  ||||||| | | || |   || | |     |||| ||  | | | ||| || | ||
Cps2K    MINISIIVPI YNVEQYLSKC INSIVNQTYK HIEILLVNDG STDNSEEICL AYAKKDSRIR    60


                                            *
Cps2J    LFRLPNGGVS NARNYGIKNS TANYIMFVDS DDIVDGNIVE SLYTCLKEND SDLSGGLLAT   120
         |   ||| |  ||||||    | | ||  ||    |         |          | |
Cps2K    YFKKENGGLS DARNYGISRA KGDYLAFIDS DDFIHSEFIQ RL_HEAIERE NAL__VAVAG   117
```

Cps2J
(SEQ. ID. NO. 51)

Fig. 7

Cps2K
(SEQ. ID. NO. 52)

Fig. 8

Fig. 9A

Fig. 9B

```
                                                                                                        SEQ. ID. NO. 48
                                                                                                        SEQ. ID. NO. 49
                                                                                                        SEQ. ID. NO. 50

(1) 10508 AAGGGCACCT CTATAAACTC CCAAAATTGC GAATTTGGAG TTACGAAAGC CTTGTTAAAT CAA-CATTTTA AATTTTAGAA AATTAGTTTT TAGAGCTCCC 10607
           |||||||||| ||||||| ||  |||||||||| |||||||||| |||||||||| |||||||||| |||  ||| || |||||||||| |||||||||| |||||  ||||
(2) 16985 GGGGGCACCT CTATAAATTC CCAAAATTGC GAATTTGGAG TTACGAAAGC CTTGTTAAAT CAA-CATCTTA AATTTTAGAA AATTAGTTTT TAGAGGTCCC 17084
           ||||||||||| |||||| ||  |||||||||| |||||||||| |||||||||| |||||||||| ||| ||| || |||||||||| |||||||||| ||||||||||
(3) 19803 AAGGGCACCT CTATAAACTC CCAAAATTGC GAATTTGGAG TTACGAAAGC CTTGTTAAAT CAAACATTTTA AATTTTAGAA AATTAGTTTT TAGAGGTCCC 19903
```
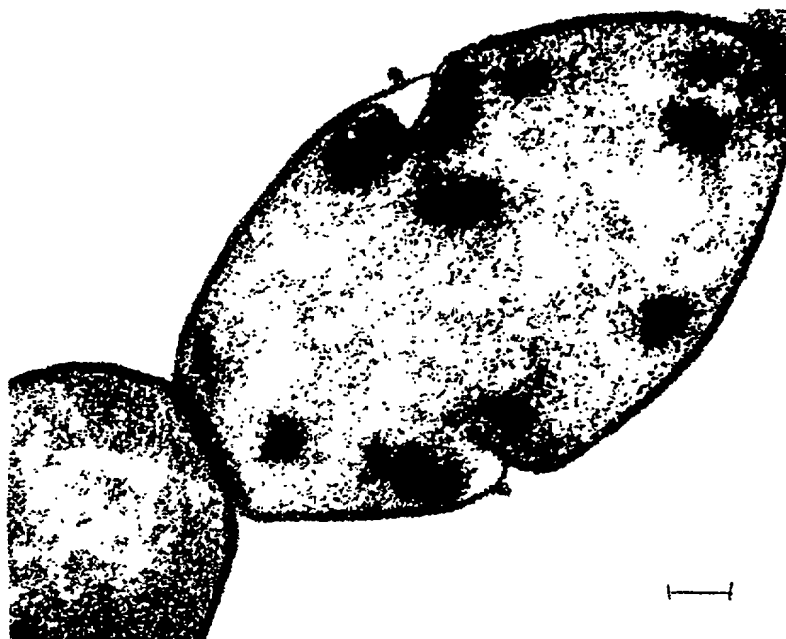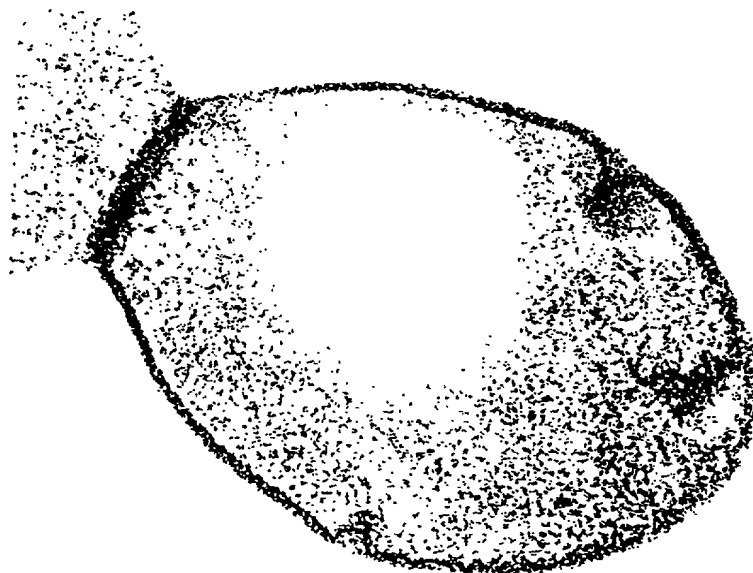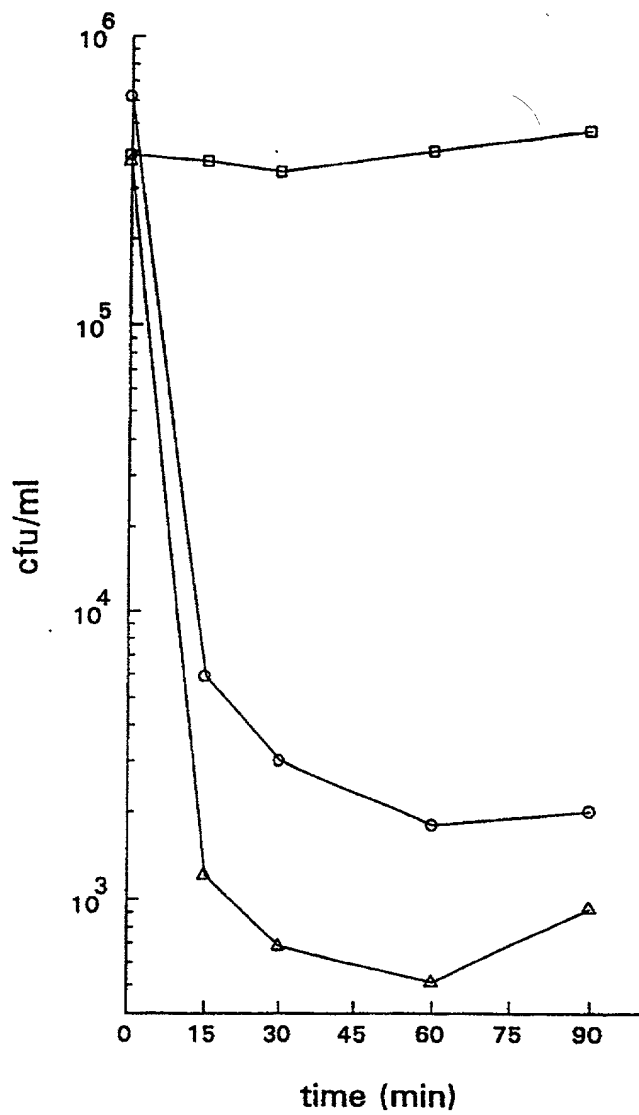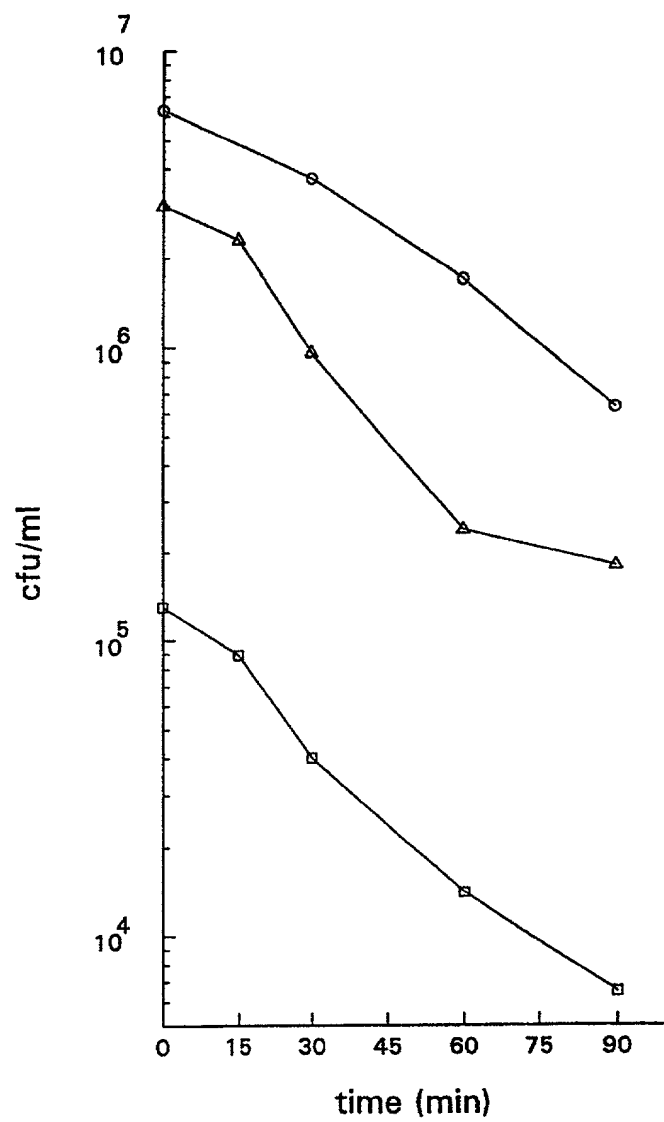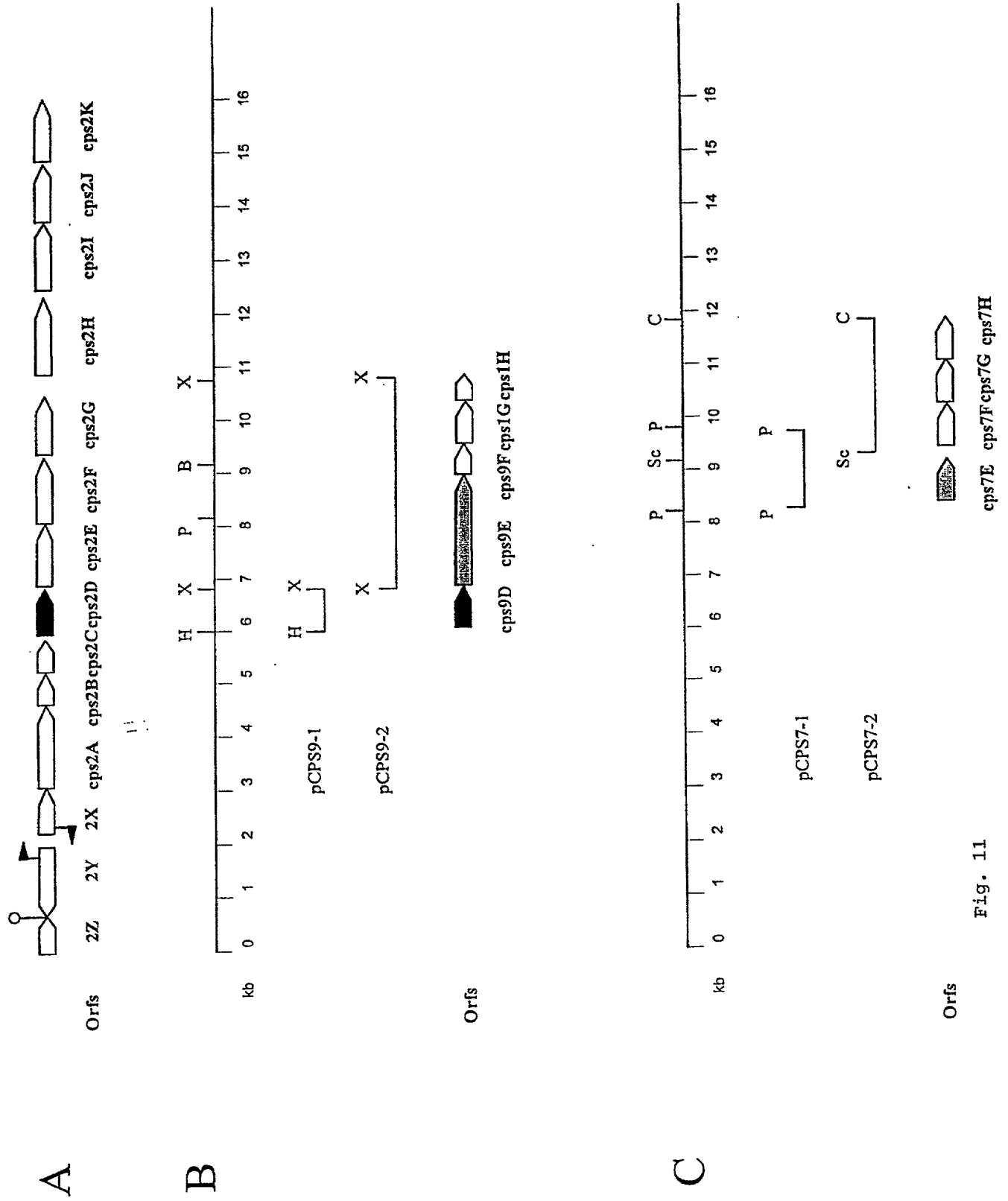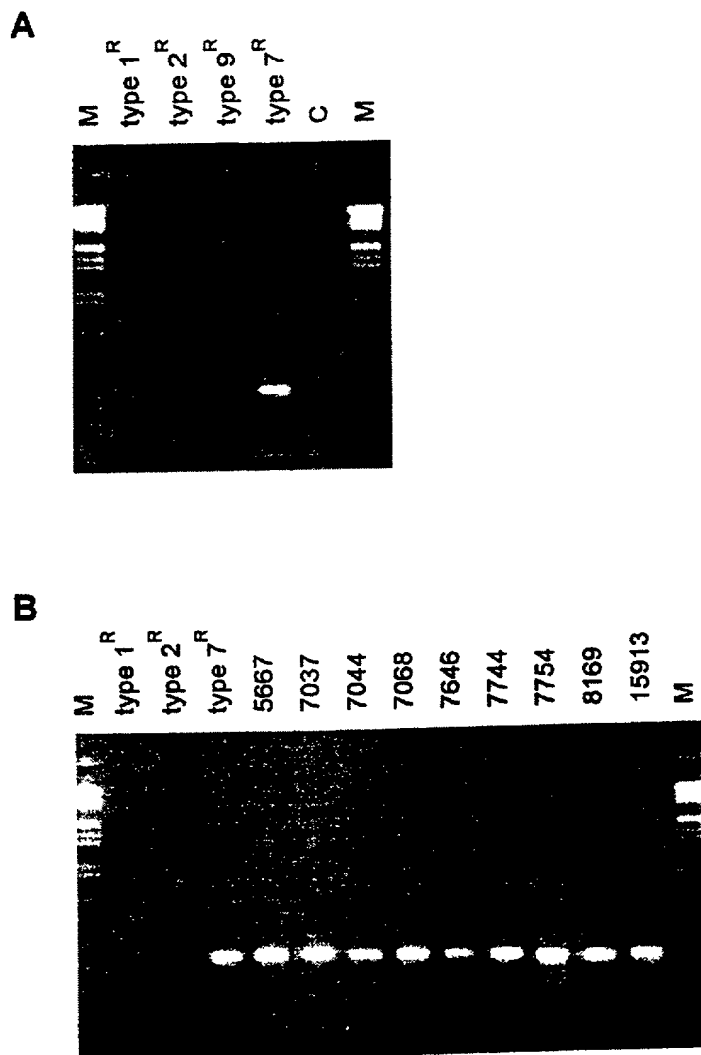
Fig. 10

Fig. 11

A

B

Fig. 12